

MARCH 1952

PRODUCTION

FLOW

BASIC MONTHLY

FLOW

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DETROIT

MATERIALS HANDLING AND PACKAGING METHODS

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FLOW BASIC
FLOW QUARTERLY

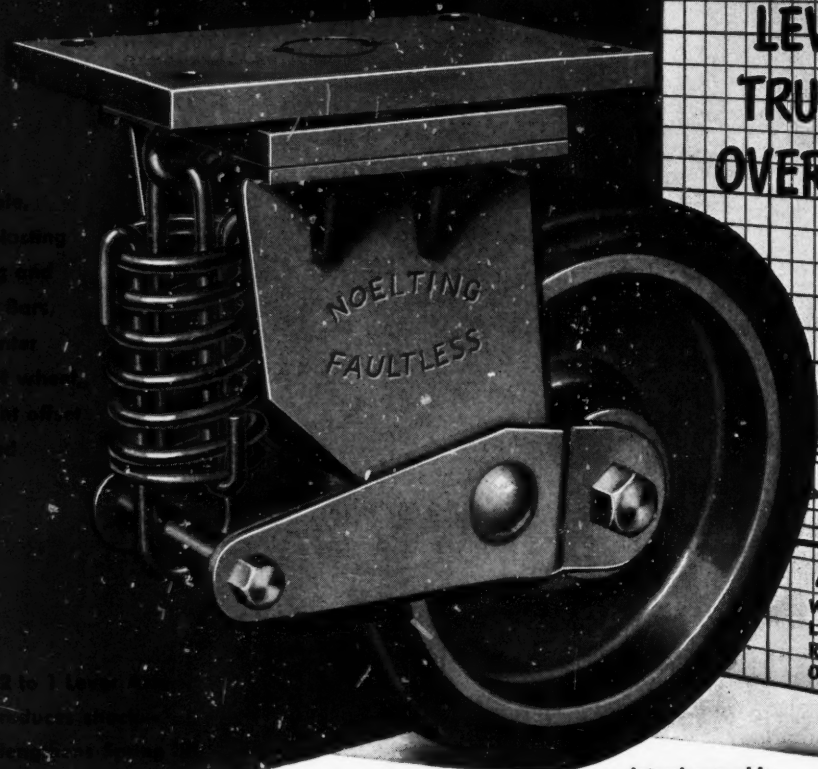
130,000 Plant Coverage

ANOTHER FAULTLESS PRODUCT ENGINEERED FOR SPECIFIC USES

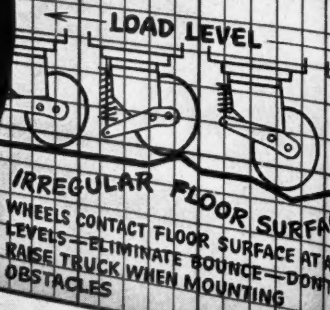
Durable

Long-loading
Spring and
draw bar
on center
line - wheel
absorbs shock
of load

2 to 1 load
capacity
1000-5000 lbs.



PROBLEM: TO ASSURE
LEVEL LOAD ON
TRUCKS MOVING
OVER IRREGULAR
FLOORS



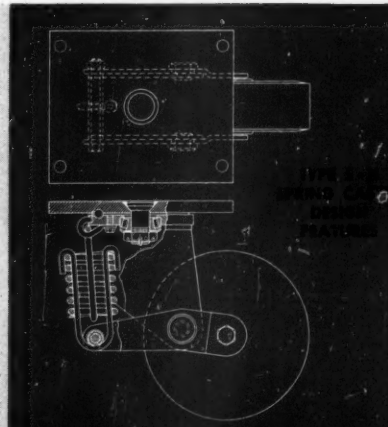
Interchangeable
Standard Wheel

The *answer to this materials handling problem is found in the New FAULTLESS S-H Double Action Spring Caster. Already time-tested by leading industrial engineers, this Caster is acclaimed for its use of standard, interchangeable wheels . . . absorption of high impact shocks through use of a large, durable spring *under constant tension* . . . spring and draw bar assembly a separate member. Here are *exclusive* features long sought by handlers of delicate equipment or finely adjusted products. Another way to cut your handling costs and man-hours. Write for descriptive literature, just off the press.

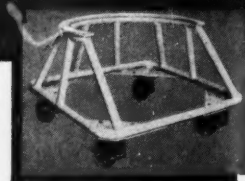
NOELTING

Faultless
INDUSTRIAL
CASTERS

- Double Ball Bearing Swivel Plate
- Standard Wheels, 4 types, easily interchanged
- Extended Wheel Offset for easier swiveling
- Shock absorbing spring lengthens life of bearings, raceways, wheel, etc.
- Springs of various load capacities easily interchanged to suit requirements



S-H Casters take jolts out of water tanks for leading Air Line.



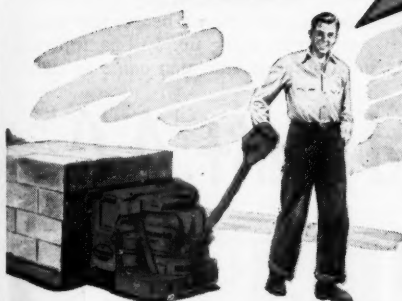
S-H Casters cushion mechanisms of jet engines moved over rough floors.

FAULTLESS CASTER CORPORATION EVANSVILLE 7, IND.

Branches in Atlanta, Boston, Chicago, Cleveland, Dallas, Detroit, Grand Rapids, High Point, Houston, Indianapolis, Los Angeles, New York, St. Louis, Canadian Factory, Stratford, Ontario

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Trade Mark Reg.
No. 552,636

"Yep . . . we're really in action now since the Boss found a way to eliminate material handling bottle-necks. I can actually handle tons and tons of materials every day—more *by myself* than three workers could by manual handling methods! We speeded-up production . . . ship more goods faster . . . and I heard the Boss say that with these hard-working Automatic "101" Transporters we're helping to reduce the unit cost of our product."

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Automatic "101" Transporters have a well earned reputation for keeping production rolling. They can save as much as 50% or more of your material handling costs—actually add man-hours to your plant's produc-

tive capacity without increasing workload of your personnel.

Figure your present material handling costs. Then match these figures against what the "101" Transporter will do for you.

And, when you consider Automatic's engineering know-how you will realize why the "101" TRANSPORTER operator-led electric trucks pay off with STAYING POWER. To clearly show how ruggedly these electric trucks stand up—to our knowledge every Transporter manufactured is still in service . . . and tens of thousands have been built.

They're sturdy! They are precision-built to give years of low cost, dependable service . . . and the thousands of Transporters built and subjected to the toughest kind of service since 1942—*prove that they do!*

Automatic®

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By.....Title.....

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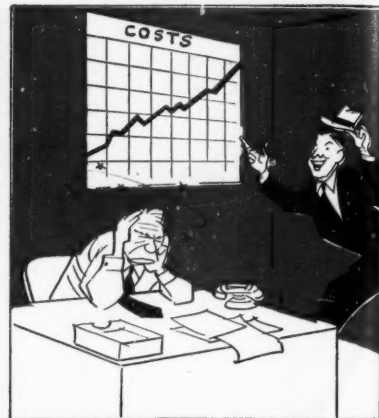
this poor man ran a B.C.* mill



*BC means before Cargotainers . . . this poor chap never heard of them. His storage was haphazard; his shipping was slow; his inventories were seldom made with any accuracy.

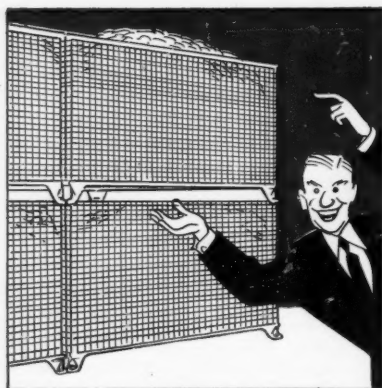


To make matters worse, the floor space of his mill was so cluttered up with finished and semi-finished merchandise that operating efficiency and safety were at low ebb.



Needless to say, operating costs were higher than at any time since the founder grew a beard, and they were still going up. Just in time a Cargotainer salesman came to call.

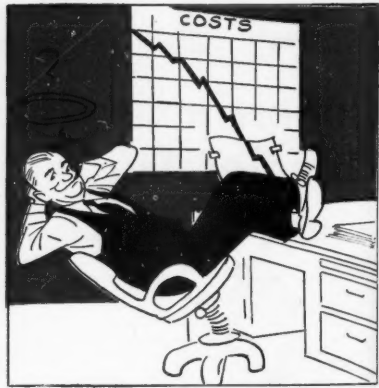
then he saw the light and went A.C.*



*AC—"after Cargotainers"—things were very much different. Even the heaviest of his products were visibly stored, tier on tier, in sturdy open-mesh Cargotainers. He never knew he had so much floor area.



Inventory check was now easy, and all materials and parts remained right in their rugged collapsible Cargotainers as they moved to assembly line and shipment. Safety records went up and costs down.



Moral: If by chance you are BC, you can save by going AC. Without obligation, our Materials Handling Engineers will show you how. Write today. Dept. F, Pittsburgh Steel Products Co., Grant Bldg., Pittsburgh 30, Pa.



CARGOTAINERS

by Pittsburgh Steel Products Company
A Subsidiary of Pittsburgh Steel Company

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MARCH, 1952 • FLOW

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FLOW Magazine is affiliated with the Industrial Publishing Company which also publishes:

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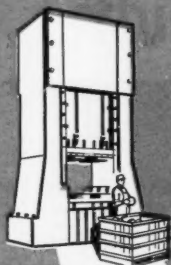
FLOW is indexed regularly by Engineering Index, Inc.

SUBSCRIPTION RATES

United States and possessions— Canada—\$4.00 per year, \$6.00 for 2 years.
\$8.00 per year, \$5.00 for 2 years. Foreign—\$5.00 per year.
Subscriptions in the United Kingdom— Single copy price—30 cents.
dom: £1.10 per annum, payable in Sterling to our London Office.

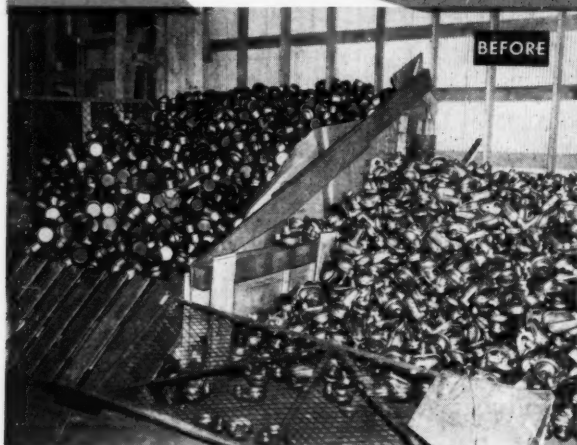
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Start inventory count at presses—with B-G Pallet Boxes.

Plant Efficiency starts with Good Housekeeping and **B-G TIGHT-CORNER COLLAPSIBLE PALLET BOXES**



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Model A Collapsible Pallet Boxes stacked in same area as shown at left develops 35% storage increase.

Made in 3 styles, Models A, B and C, the latter two having front openings for convenient accessibility to materials without removing upper tiers.

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Actual tests show that, in the same area, B-G Collapsible Pallet Boxes give 35% more storage space than bulk storage.

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B-G Pallet Storage Boxes allow neater storage and larger aisles, with greater accessibility for handling. Highly approved by Safety Rules Committees.

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B-G Boxes permit faster and easier movement to and from assembly lines. Save storage labor. Give positive inventory control.

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Pallets



Pallet Boxes



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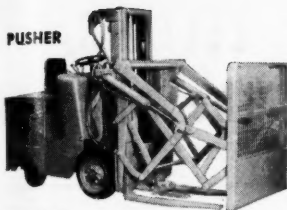
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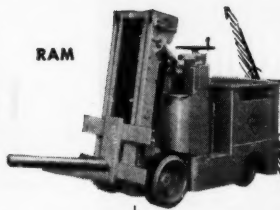
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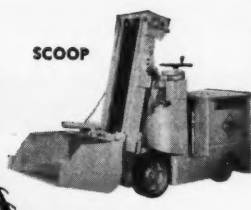
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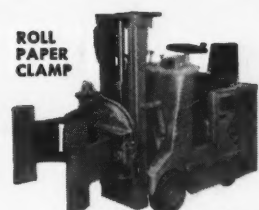
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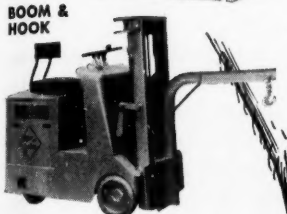
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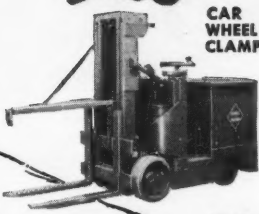
SCOOP



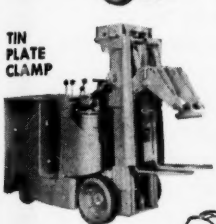
ROLL
PAPER
CLAMP



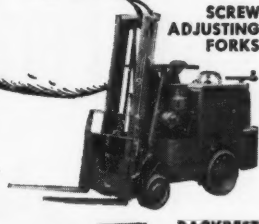
BOOM &
HOOK



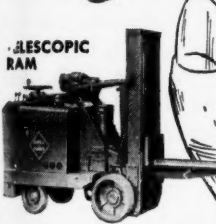
CAR
WHEEL
CLAMP



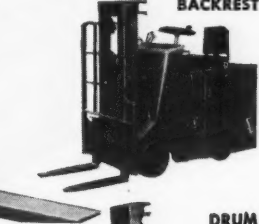
TIN
PLATE
CLAMP



SCREW
ADJUSTING
FORKS



TELESCOPIC
RAM



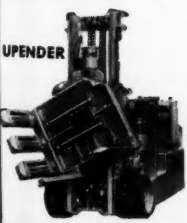
BACKREST

GIANT WITH 19 HANDS



REMOTE
CONTROL
LIFT

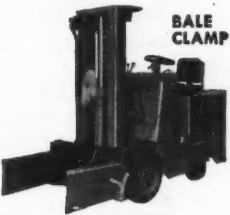
One Elwell-Parker gives you the strength of a giant—more muscle power than 10 men. And giants' hands could not be more dextrous than the ingenious fork truck with attachments illustrated. They are a product of Elwell-Parker's 45 years' experience, gained while solving scores of unusual handling problems. Truly, Elwell-Parkers can be made to do almost anything but think—our engineers do that! The Elwell-Parker Electric Company, 4233 St. Clair Avenue, Cleveland 3, Ohio.



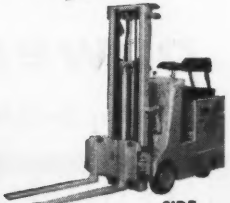
UPENDER



DRUM
GRAB



BALE
CLAMP



SIDE
SHIFTER



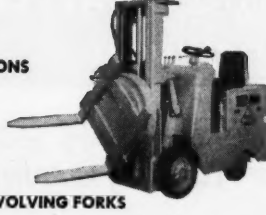
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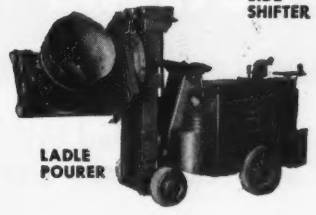
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plus 5-CLAD insulation for **LONGER LIFE**

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for industrial trucks

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LETTERS to the editors

To FLOW:

I would be interested in receiving a list of 16 mm. sound films on the use of lift trucks and other mechanized handling equipment in stevedoring operations, and how such films may be obtained for showing.

L. P. Thomason
Saguenay Terminals Limited

In its January issue, FLOW presented a complete list of material handling films which are available to interested groups or individuals. A tear sheet of this list has been sent to Reader Thomason. The list not only contains title, but also a brief description of each film and the source from which it is available. A similar list run in Dec., covers literature available. Copies of both lists are waiting for anyone requesting them.

To FLOW:

We are interested in obtaining a list of universities and other institutions who are conducting courses in material handling. Any information you can provide will be appreciated.

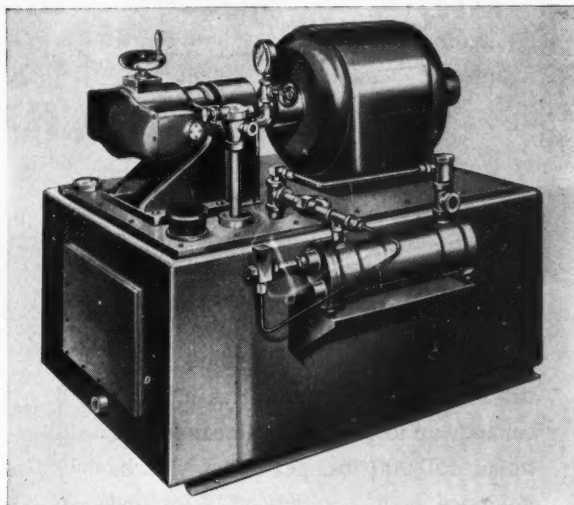
H. G. Worley
Canadian Industries Limited.

A list of 14 colleges offering the type of course requested has been forwarded to Reader Worley. It is, to the best of FLOW'S knowledge a complete list, and will be sent to other readers requiring such information.

To FLOW:

We have a material handling problem requiring impartial selection of methods and equipment from a number of alternatives. In writing to you, we hope that your staff can consider the problem and make general recommendations as to methods and classes of equip-

MORE MACHINE MANUFACTURERS INSTALL **MARVEL SYNCLINAL FILTERS** AS ORIGINAL EQUIPMENT

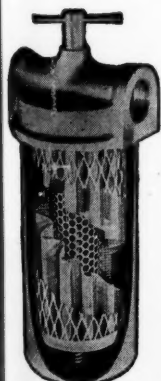


Large series hydraulic pumping unit manufactured by The Denison Engineering Co., Columbus, Ohio to recommendations of the Joint Industry Conference. These pumping units are equipped with Marvel Synclinal Filters.

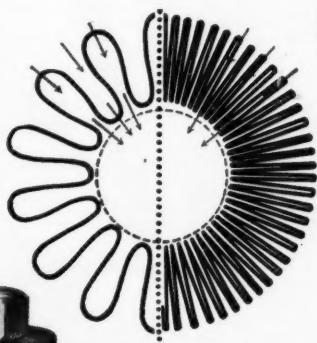
They Know That ONLY ACTIVE FILTER AREA COUNTS!

It isn't the total amount of filtering mesh that may be squeezed into a filter unit but the amount of **ACTIVE, WORKING** filter mesh that counts. Surplus mesh not only fails to filter but obstructs the passage and slows the flow. A too crowded unit does not have adequate space for storage

of accumulated foreign matter—tightly packed pleats of mesh can soon become clogged with filtered out material. Marvel Synclinal Filters are balanced to provide maximum mesh area for all the liquid which can pass through the space and allow necessary room for filtered out material. That is why they excel in maintaining efficiency through longer periods between cleanings. Not only is the frequency of cleaning reduced but disassembly, cleaning and reassembly is so simple that ordinary workmen can do it quickly.



LINE TYPE
(Cutaway)



MARVEL
BALANCED
SYNCLINAL
DESIGN

UNBALANCED
BY INACTIVE
FILTER AREA



SUMP TYPE
(Cutaway)

Meets
I. I. C.
Standards

FACTS—NOT CLAIMS

"Campaign promise" claims mean little to engineers. They want the record, measurable facts. That is why over

260 MANUFACTURERS
have picked

Marvel Synclinal Filters

AS THEIR O.E.M. CHOICE

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engineering data
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Sump and line models available in capacities from 5 to 100 g.p.m. Mesh sizes from 30 to 200. Line models operate in any position and may be serviced without disturbing pipe connections. For efficient filtration of non-corrosive liquids in hydraulic and low pressure systems, Marvel has your answer.

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625 W. Jackson Blvd. Chicago 6, Ill.



Lift,

upend

and

dump

any material

CUT HANDLING COSTS!

Cut handling costs with the Cesco Dumper. It lifts and dumps bulk, bags, drums, barrels or boxes. Has a lifting capacity up to 1500 lbs. and can handle up to 150,000 lbs. per hour. May be equipped with a variety of skips and loaders including bag dumpers, drum dumpers, dust control types.

Cesco Dumper is made in standard dumping heights from 5 to 12 feet and in other sizes to order. 3-button control—UP, DOWN and STOP—acts instantly and stops travel without coasting. Lifts its load by cable and pulley powered by an electric motor.

- PREVENTS ACCIDENTS
- STOPS WASTE BY SPILLAGE

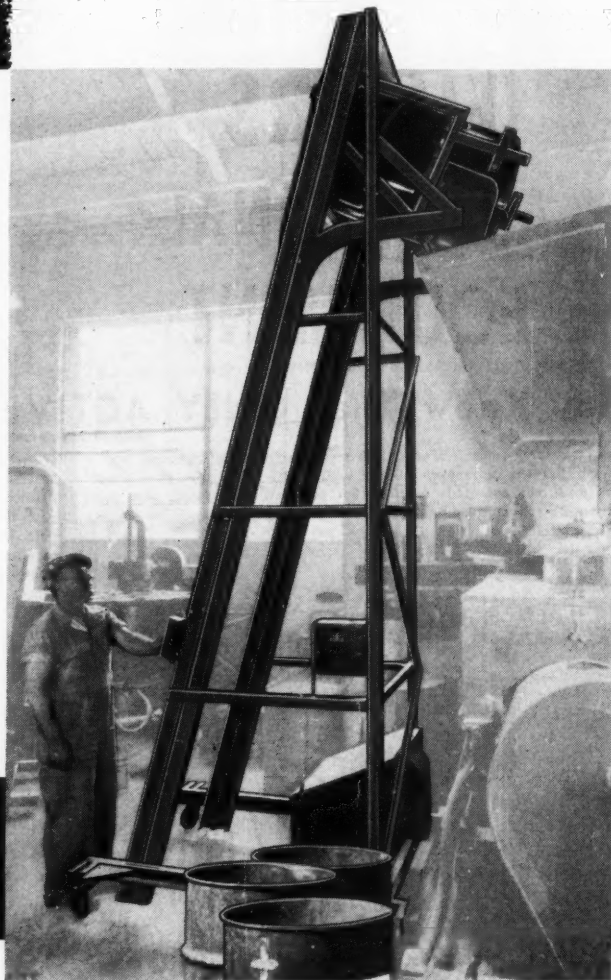
CESCO DUMPER

SKIP-HOIST

Handles BAGS

Handles DRUMS
and BARRELS

Handles BULK
and BOXES



GET ALL THE FACTS! SEND FOR CATALOG

Here are eight picture-packed pages showing the various uses of the Cesco Dumper and its mechanical features. Write for your copy today.

COLSON Equipment & Supply Co., 1315 Willow St., Los Angeles, Calif.
ESSEX Conveyor, Inc. • 101 Golden Street, Newark, New Jersey.

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MARCH, 1952 • FLOW

ment, and in so doing eliminate taking the matter up with a variety of suppliers. Our problem is the proper method of storing and handling bar stock, strip stock and coil stock.

John A. Eaton
American Bosch Corp.

Reader Eaton's problem was discussed by FLOW in its October issue under the title, "24 Methods of Handling and Storing Steel . . ." Tear sheets are on their way to him. The article recommends proper equipment and accessories for handling and storing sheet steel in cut lengths and coils, strip steel in cut lengths and as strip and coils, plates, bars, and structural shapes. Copies are available for other interested readers.

To FLOW:

I would appreciate receiving six copies of the reprint, "Floor Load Capacity Rating and its Relation to Industrial Power Trucks." Thank you for your cooperation.

Geo. A. Smith
American Material Handling Society.

The article asked for by Reader Smith was run in the November issue of FLOW. Six copies are on their way to him. Other readers can also have copies merely for the asking.

To FLOW:

We have been referred to an article that appeared in the May, 1951, of FLOW Magazine on pages 70 and 71. This article, I believe, refers to a palletizing method which we would like to study. Could you please send me reprints or a copy of this issue, if available.

Bernhard F. Gentsch
United Clay Mines Corp.

Tear sheets of this article from FLOW'S "War Ready" issue are still available and a set has been sent to Reader Gentsch. The article concerns palletizing bagged clay.

How you **SAVE ON** **HOIST MAINTENANCE** **WITH COFFING**

...Quik-Lifts

Here are just a few of the "extras" that keep Coffing Quik-Lift electric hoists on the job, save maintenance:

- Gears are drop-forged alloy steel, hard-faced for extra wear, soft-cored for added strength. Teeth are larger, stronger.
- Moving parts run on lubri-sealed ball bearings.
- Pendant rope controls are used for more dependable and trouble-free service over the years.
- Load-holding parts are tested at 100 percent overload.

Quik-Lift electric hoists available in 17 models,
500- to 4,000-lb. capacities.

...Challengers

Coffing Challenger spur-gear hoists are completely new throughout...with new lightness, new strength, new design simplicity:

- Housing is formed steel plate—withstands shock loads and rough handling.
- Laminated steel back plate gives extra support to hoist mechanism.
- Has five-to-one safety factor, tested at 100 percent overload.
- Gears and bearings have lifetime lubrication.
- The Challenger has only 29 basic parts—simplest spur-gear hoist ever made.
- May be completely disassembled in minutes with ordinary tools.

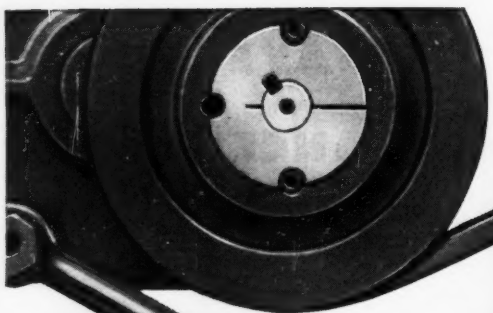
Challengers and other Coffing spur-gear hoists
in capacities from 1/2 to 5 ton.

Test these points yourself. Pick out the toughest hoist job you have, install the right Coffing electric or spur-gear hoist—then see how little maintenance is required, how they stay on the job. For further information on Quik-Lifts and Challengers, write Dept. FL 3.

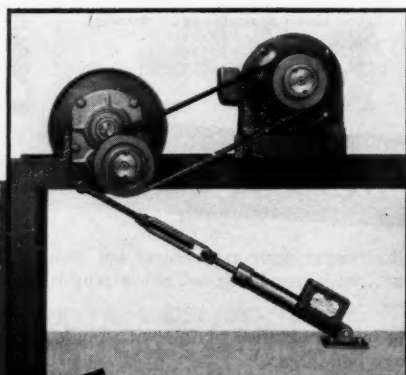
COFFING HOIST COMPANY Danville, Illinois

HOIST-ALLS • SAFETY-PULL RATCHET LEVER HOISTS • MIGHTY-MIDGET PULLERS
DIFFERENTIAL CHAIN-HOISTS • LOAD BINDERS • I-BEAM TROLLEYS
Sold By Distributors Everywhere

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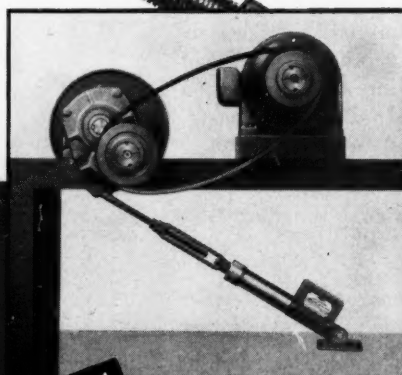


NEW!



SET!

Overload Release is set. Motor runs freely, speed reduced to operating position on 150% overload. (Overload release is instantaneous with standard torque arm.)



TRIPPED!

Overload Release has tripped. Motor stops at 150% overload. (Overload release is instantaneous with standard torque arm.)

Now . . . another great development by Dodge . . . that provides instant and positive protection for driven machines, motors, and the famous Torque-Arm Speed Reducer itself! The new Dodge Tri-Matic Overload Release prevents breakdowns, avoids expensive repairs, insures your production against costly interruptions.

Here's a worthy companion to other Dodge achievements in power transmission machinery, such as Taper-Lock Sheaves, Dodge-Timken Bearings, Rolling Grip and Diamond D Friction Clutches, Dodge Torque-Arm Speed

Reducers, which have brought dependable speed reduction to industry's machines at great savings in cost, are available in two series—Single Reduction and Double Reduction—with capacities from 1 hp to 43 hp, speeds from 12 to 330 rpm.

Write for special data on Torque-Arm Speed Reducers and the new Tri-Matic Overload Release.

CALL THE TRANSMISSIONS MAN. Your local Dodge Distributor, Factory, or Dodge, he can give you valuable assistance on any problem you may have. Look for his name under "Power Transmission Equipment" in classified phone books.

DODGE MANUFACTURING CORPORATION, 2300 Union St., Milwaukee, Wis.



DODGE **Tri-Matic** **Overload** **Release**

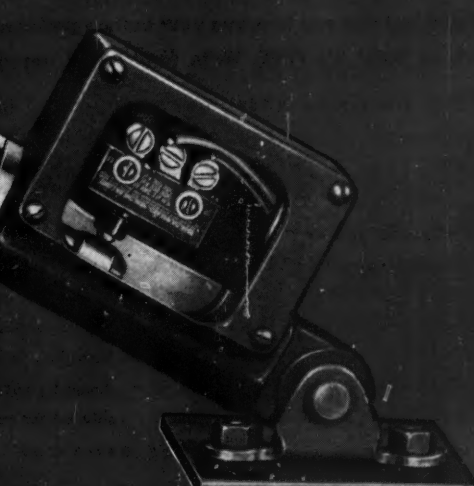
**FOR THE FAMOUS DODGE
TORQUE-ARM SPEED REDUCER**

- 1 LOOSENS THE BELTS**
- 2 CUTS OFF POWER**
- 3 GIVES A WARNING**

Protects Your Machines Mechanically . . . Electrically POSITIVELY!

- The Dodge Tri-Matic Overload Release is a simple, positive acting unit that replaces the standard torque arm that is regularly furnished with the Dodge Speed Reducer. (The two are interchangeable.)
- Pressure exerted by an excessive load causes a piston to move lengthwise through the unit, activating the mechanism instantly.
- This movement shortens the torque arm, loosens the belts and cuts off current simultaneously.
- A warning system can be hooked up to the micro switch of the Tri-Matic—to activate bell, siren or light.
- The Tri-Matic is calibrated for adjustment to the load conditions of any job. It can be set to act at any desired load up to the reducer's maximum capacity.
- It is easy to reset the Tri-Matic. Just pull the speed reducer back into position. This automatically cocks the release mechanism.
- The Dodge Tri-Matic Overload Release is available from distributors' stocks in sizes for all Dodge Torque-Arm Speed Reducers—in either single or double reduction series.

DODGE



Circle No. 10 on Reader Service Card for more information

GOULD

Plus-Performance

Plan

...HELPS EXTEND YOUR BATTERY
POWER BY HELPING YOU TO

KNOW THE CONDITION OF YOUR BATTERIES!

Knowledge of the condition of your batteries is important because: (1) you know when batteries should be replaced to assure you of uninterrupted power, (2) you know whether your batteries are being overworked and (3) you can be sure of correct charging and systematic maintenance. For these reasons, the GOULD PLUS-PERFORMANCE PLAN emphasizes the various ways to determine battery condition.

The GOULD PLUS-PERFORMANCE PLAN consists of manuals, articles, specifications, bulletins, record cards, charts and graphs covering every phase of battery care. It gives you information on how to select charge, handle, maintain, inspect and test that can improve your battery performance as much as 50%! It's FREE. Write for booklet describing the plan.



Temperature and specific gravity readings indicate battery condition.

DETERMINING INDUSTRIAL TRUCK BATTERY CONDITION

RECORDS—Specific gravity, time and temperature readings of pilot cells before and after charging should be taken daily and compared with previous readings.

TEST DISCHARGE—To determine whether a battery is delivering rated capacity, make a

test discharge. Discharge a fully charged battery at 6-hour rate until the voltage drops to 1.75 volts per cell. Compare ampere hour capacity obtained with rated capacity.

Batteries delivering less than 80% of rated capacity, with all cells uniform, should be considered for replacement.



Gould "Thirty" with "Z" Plates—America's Finest Industrial Truck Battery

GOULD

STORAGE BATTERIES

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, NEW JERSEY

Always Use Gould-National Automobile and Truck Batteries

Circle No. 11 on Reader Service Card for more information

RY
TO
W
!



ty"
es—
nest
Battery

IES
NEW JERSEY

• FLOW

EVER HEAR ABOUT THE "FIVE THUMB" CLUB?



Ready to cut
maintenance
costs for you
is this Aerol
Standard Duty
Wheel. Avail-
able in
diameters of
from 3 inches
to 20 inches.



You'll find its members in practically every major industrial plant in the country . . . The "Five Thumbers" are the chaps who buy on price, and ignore quality . . . overlooking maintenance cost savings that total thousands of dollars.

Look, for example, at materials handling equipment . . .

The quality buyer who specifies Aerol wheels and casters gets ultimate total savings of as much as 25%, because Aerol's exclusive features reduce maintenance and replacement costs to the minimum.

Aerol wheels are lubricated for life at the factory, eliminating a costly maintenance factor. Timken Tapered Roller Bearings guarantee greater rollability . . . and ease of handling is certain, because Aerol rigs reduce weight by as much as 60% per assembly.

Stress tests prove that you can forget about "break-down" worries—because Aerol wheels will withstand shock loads up to as much as 20 times rated capacity.

CONCENTRATE ON

aerol

WRITE FOR CATALOG today—
get the story of the entire
Aerol Line. Address inquiries
to: Aerol Co., Inc., 2424 San
Fernando Road, Los Angeles 65,
California—Dept. F

2424 SAN FERNANDO ROAD, LOS ANGELES 65, CALIFORNIA

NO WHEEL ROLLS  LIKE AN AEROL

Circle No. 12 on Reader Service Card for more information

FLOW • MARCH, 1952

*It has a
"Mathematical
Eye"
for Distance*



Everyone Can Count on VEEDER-ROOT

Here's still another good soldier, on a highly special assignment. With contact assembly, it counts miles and yards, when used in conjunction with other equipment. And it also makes contacts on *predetermined* readings . . . *direct* readings that need no translation.

Now, as the counting process comes to be counted as more

and more indispensable to all types of defense materiel, what might we do . . . *especially for you?* Just say when you'd like to get together...and start figuring.

VEEDER-ROOT INCORPORATED
"The Name That Counts"
HARTFORD 2, CONN.

Chicago 6, Ill. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Offices and agents in principal cities



"Counts Everything on Earth"

MEN in the news



C. H. Gilbert
U. S. Rubber Co.



A. C. Loudon
Louden Mch'y. Co.

... at Louden Machinery Co.

The new president is **A. C. Loudon**, formerly vice president and production manager. He succeeds his brother, the late **R. B. Loudon** who headed the company until his death in November. The new president has been associated with the company for more than 50 years.

Two vice presidents, **W. L. Fry** and **R. W. Loudon**, have also been elected. They will serve with the head of the company on an executive committee which will have charge of all general management functions.

Wilbur Mayer, manager of the monorail division was named to the board of directors to fill the vacancy caused by the death of **R. B. Loudon**.

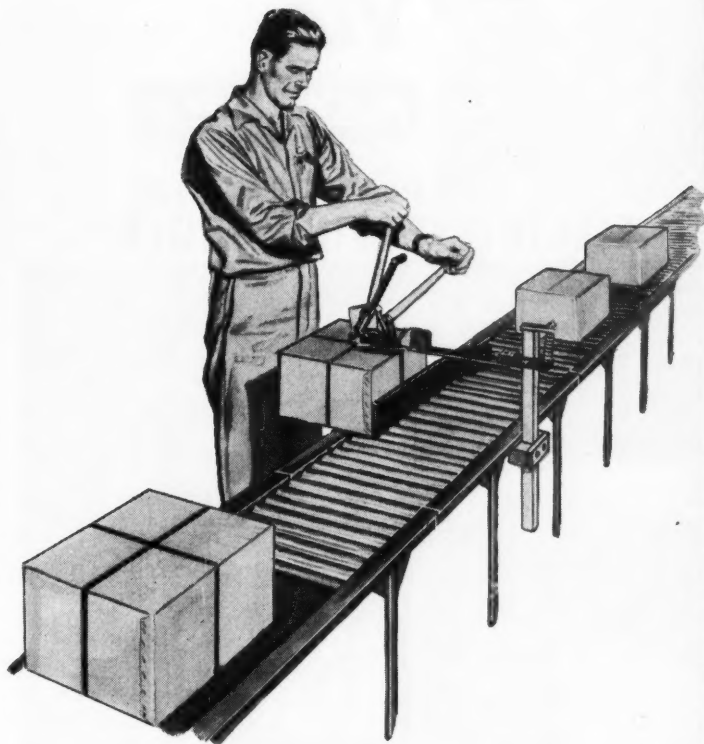
... at U.S. Rubber Co.

Carlton H. Gilbert, formerly advertising manager of the Royalite division has been named advertising manager of the company.

... at Kimberly-Clark Corp.

A. G. Sharp, general sales manager announced the following appointments: **R. H. DeWilde**, for-

Here's how to shorten packing time, reduce damage in transit



**"What we call time enough,
always proves little enough."**

—Ben Franklin's Almanac, 1757

Today, more than ever, time is money,
and there's never too much to go round.
That's why so many manufacturers use

Acme Steelstrap to secure their products for shipment.

Acme Steelstrap saves time and labor because it's so fast to put on. Even unskilled crews secure packages quickly and easily with Acme tools specially made for the purpose.

Steelstrap minimizes damage in transit, cuts shipping costs and increases customer satisfaction and good will.

Why not get all the information you can about it? An Acme Steel representative will be glad to help you solve your packaging and shipping problems without obligation.

Ask your Acme Steel representative, or write to Acme Steel Products Division, Dept. F-32.

ACME STEEL COMPANY

2840 Archer Avenue, Chicago 8, Illinois



Steel Strapping—Stitching Machines & Wire—Corrugated Fasteners
Circle No. 14 on Reader Service Card for more information

ACME STEEL CO.
CHICAGO, ILL.

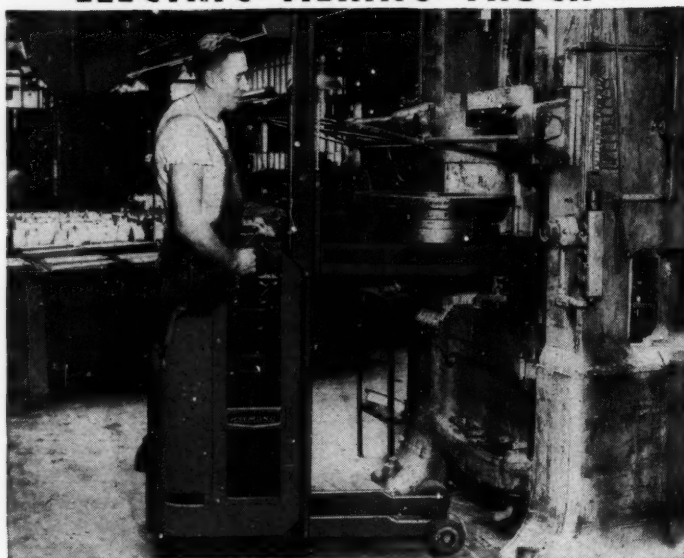


NON-STOP
from tool room to press

VIA



**PLATFORM-TYPE
ELECTRIC TIERING TRUCK**



- Now, load up the die in the tool room . . . go non-stop (up to 3 1/2 mph) through narrow aisles and crowded production areas . . . and position it right at the machine with this RAYMOND Platform-Type Electric Tiering Truck! There'll be no wasted work-time, no halt in production because one man can do the whole job alone.
- Put this RAYMOND Tiering Truck to work on your production floor or use it for warehousing or shipping . . . it will go anywhere a hand truck will go!
- What's the secret? The truck's short length and patented* offset drive wheel with 200° turning arc. It features a patented* knee-action swivel caster to compensate for uneven floors . . . comes in both 2,000 and 4,000-lb. capacity models.

The RAYMOND CORPORATION

Formerly LYON-Raymond Corporation
3368 Madison St., Greene, N.Y.

Please send me Bulletin 710 on your Platform-Type Electric Tiering Truck. I'm interested in a demonstration: ☐ Yes ☐ No

Name Title

Company

Street

City State

Bulletin 710 gives you the facts . . . send for it today! Ask to see the RAYMOND Platform-Type Electric Tiering Truck demonstrated.

* Patent No. 2,564,002



ELECTRIC INDUSTRIAL TRUCKS
HYDRAULIC ELEVATING EQUIPMENT

Circle No. 15 on Reader Service Card for more information



T. J. Moore, Jr.
Brainard Steel Co.



M. J. Weber
Frank G. Hough Co.

merly Kimpak sales representative in southern California, becomes district 1 sales manager of industrial cellulose wadding products, including Kimpak, Sanek, and Kimwipes. His headquarters will be in New York city.

Douglas G. Berry becomes District 2 Sales Manager of the building products division. His headquarters will be in Chicago. Formerly, Berry was in sales service at Neenah, Wisconsin.

... at G. B. Lewis Co.

Lewis W. Parks, president, died after a long illness. He had been president of the company since 1938 after the death of **George C. Lewis**.

... at Frank G. Hough Co.

Milton J. Weber is now vice president in charge of procurement. He had been in charge of purchasing and priority for several years.

... at Brainard Steel

Thomas J. Moore, Jr., has been promoted to the post of general manager. He had been vice president of Brainard before the recent designation of Sharon Steel's subsidiaries as operating divisions. **E. T. Sproull**, formerly president of Brainard will serve as chairman of the management committee, and **W. J. Keegan** formerly secretary and treasurer, is now assistant general manager.

... at Baker-Raulang Co.

John A. Borman has been appointed chief engineer of the com-

pany, according to an announcement by **E. W. Sankey**, vice president. Borman will have charge of administration of the engineering department both with regard to new development work and production engineering. He has been with the company since March of 1950.

... at **Baldwin-Lima-Hamilton Corp., Lima-Hamilton Div.**

Paul R. Ehr Gott has been appointed assistant to the resident vice-president. He will also serve as sales manager in charge of all sales of shovels of 3 yd. capacity and larger. Ehr Gott joined the company in 1931.

J. W. Hardesty has been appointed sales manager of small shovels and cranes. He will be in charge of domestic sales of all shovels and cranes up to an including $2\frac{1}{2}$ yd. capacity. Prior to this appointment, he was district manager of the territory including northern Ohio, Indiana, Illinois, Michigan, Missouri and Kansas.

... at **Darnell Corp., Ltd.**

Ray W. Longfield, vice-president, died recently.

... at **Thermoid Co.**

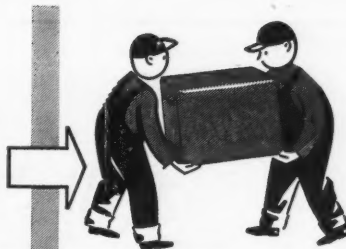
A. F. Matheis has been appointed assistant sales manager of the industrial rubber products division at Thermoid Co., according to **Fred Schluter**, president. Matheis was formerly sales promotion manager of the division.

Carroll Hall, former project engineer has been appointed assistant factory superintendent of the Essex Rubber Co., a Thermoid subsidiary.

... at **Lamson Corp.**

Because of recent executive changes at Lamson, which advanced **Robert I. Hicks** from vice president in charge of sales to that of president, a new manager of sales, **Robert B. Coleman** has been announced. The newly-created post embraces direction of Lamson's 19

**This man's
WASTED**



**This man
ISN'T**



RAYMOND

Lightweight **LIFT TRUCK**
makes the difference

BEFORE—two men or more struggled to handle heavy loads.
What a waste of precious work-time!

NOW—one man plus a RAYMOND Lightweight Lift Truck handles 1-ton pallet loads with ease. The secret? Hydraulic power does all the lifting — a few quick pumps on the convenient foot pedal and the load's ready to be moved.

RAYMOND Lightweight Lift Trucks are so maneuverable they squeeze into hard-to-get-at places. Pallet entry is smooth and effortless — lateral movement, fast and easy. Use them to lighten rush hour handling — speed up short hauls — release power trucks for long hauls and tying.



MODEL
L2P

RAYMOND Lightweight LIFT TRUCK for double-face pallets illustrated. Also in Heavy-Duty Models with 2 or 3-ton capacities.

SPEEDS UP TO 6 MPH!

RAYMOND Low-Lift Rider-Type Electric Truck. Ideal for long hauls, stock picking, loading, unloading. Capacity 2 tons.

MODEL
EL4F

The RAYMOND CORPORATION

Formerly LYON-Raymond Corporation

3372 Madison St., Greene, N.Y.

Gentlemen: Please send me the Bulletins indicated: 223, Light-weight Lift Truck; 222, Heavy Duty Lift Truck; 750, Low-Lift Rider Type Electric Truck.

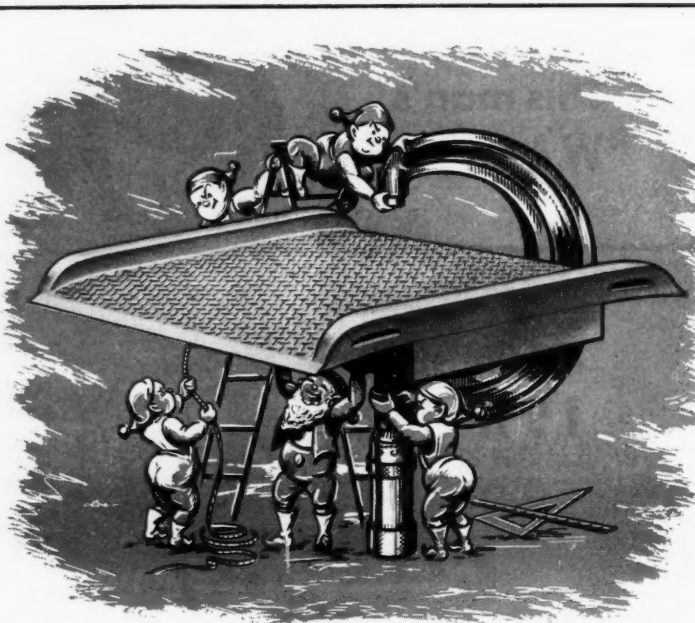
NAME..... TITLE.....

COMPANY.....

STREET.....

CITY..... STATE.....

Circle No. 16 on Reader Service Card for more information



How do YOU measure a Dock Board?

WEIGHT

MAGLINER MEASURES UP!

Magnesium-light! Easily handled by ONE man!

STRENGTH

MAGLINER MEASURES UP!

All-magnesium, bridge-type construction. Capacity-rated. Strength-to-spare for the heaviest loads and equipment!

SERVICE

MAGLINER MEASURES UP!

Long service life. PROVEN on loading docks all over the country!

SAFETY

MAGLINER MEASURES UP!

Overall lightness reduces lifting accidents! Exclusive, automatic drop lock prevents dangerous slippage. Inclined safety stringers prevent truck roll-offs and tire damage.

COST

MAGLINER MEASURES UP!

Low initial cost. Substantial savings through increased production — faster, smoother traffic flow!

GAIN INCREASED LOADING CAPACITY WITHOUT INCREASING COSTS!
WRITE TODAY FOR DESCRIPTIVE BULLETIN DB-204.



MAGLINE, INC. • P.O. BOX 350 • PINCONNING, MICHIGAN

Circle No. 17 on Reader Service Card for more information

field offices, coordination of sales and marketing activities of its four products divisions, and the selection, training and compensation of field personnel. Coleman comes to Lamson from 15 years with American Chain and Cable Corp.

... at Lewis Shepard Products Inc.

The appointment of **David W. Niven** as advertising manager has been announced by **Arthur L. Lewis**, president. Niven was previously in the advertising promotion department of Life magazine.

... at Westinghouse Electric Corp.

The appointment of **George E. Goodrich** to the position of assistant manager, industrial department, has been announced by **F. D. Weatherholt**, department manager. Prior to his present promotion, Goodrich was resale manager of the company's Middle Atlantic districts.

... at International Paper Co.

The board of directors announced the election of **William J. Murray, Jr.**, to the board to fill the vacancy created last May by the death of **Albert H. Wiggin**. Murray is also chairman of the board of McKesson & Robbins, Inc., and a director of the Bank of Manhattan Co., and General Food Products.

... at Allis-Chalmers Mfg. Co.

William M. Wallace has been appointed an assistant to the vice president of the general machinery division. Since 1947, he has been special assistant to **G. V. Woody**, manager of the company's processing machinery department.

Henry M. Faulkner, district manager in the eastern territory was appointed southwest industrial manager. He will now headquarter at the company's home office, Milwaukee, Wisconsin.

In another appointment, **Elvin R. Danielson** becomes supervisor of priorities succeeding the late **Robert T. Ward**.

Turn to page 97

MARCH, 1952 • FLOW FLOW

King of FORK TRUCKS for OUTDOOR HANDLING



Tracto-Lift makes transporting, yard stacking easy
—speeds handling of heavy loads "in the rough."

UTILIZE UNPAVED OUTSIDE STORAGE SPACE!

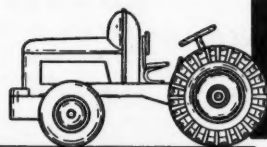
NOW . . . for the first time, you can utilize unpaved outside space for storage! Tracto-Lift is a fork truck that can work anywhere, even on rough, unpaved ground. The large pneumatic tires, basic tractor transmission, and ample underneath clearance of Tracto-Lift combine to give you more traction, more flotation, greater roadability, and greater work capacity. Free valuable floor space, and save the cost of an expensive building by using Tracto-Lift, the fork lift truck that can go anywhere—do anything!

SPEED MATERIALS HANDLING!

Tracto-Lift steps up production! As the load weight is increased, the steering ease increases. Maximum maneuverability. You can handle materials at the higher speeds of industrial tractors and even climb inclines up to 20% with Tracto-Lift!

CUT HANDLING COSTS!

Tracto-Lift will cut down your materials handling and labor costs. With a low first cost, it will pay for itself in a short time. Parts and service are available throughout the world; Tracto-Lift is based on a standard industrial tractor. A complete line of versatile attachments is available.



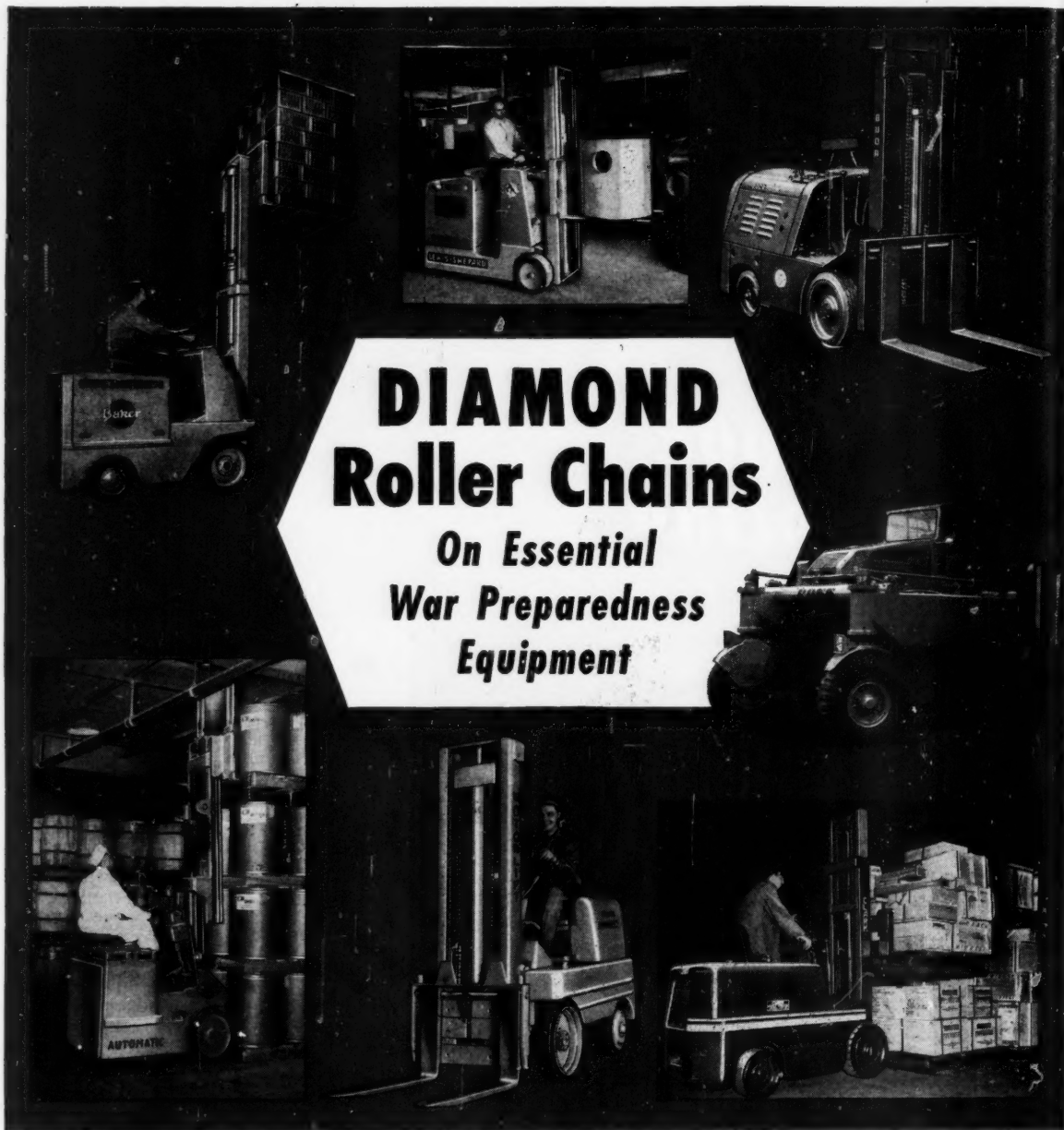
LIFT COMPANY

2011 BALTIMORE Kansas City 8, Mo.

TRACTO

Write today for complete specifications on
Tracto-Lift. . . No obligation.

Circle No. 18 on Reader Service Card for more information



DIAMOND Roller Chains

*On Essential
War Preparedness
Equipment*

● Diamond Roller Chains are incorporated in the design of a host of materials handling, conveying, and transporting equipment because they provide the simplest and most dependable method of power transfer. Such equipment, useful in all of industry's work, becomes indispensable when strenuous, long-hour war preparedness production is undertaken.

Of vast importance, therefore, is the selection of Roller Chain well established for its high uniform quality, efficiency and great reserve strength without

which the maximum value of such equipment cannot be provided.

On the smallest units up to and including big Diesel locomotives, Diamond Roller Chains are performing daily up to standards established and proven through over 60 years of chain manufacture.

DIAMOND CHAIN COMPANY, Inc.

Dept. 624, 402 Kentucky Ave., Indianapolis 7, Indiana

Offices and Distributors in All Principal Cities

Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER



DIAMOND



**ROLLER
CHAINS**



Circle No. 19 on Reader Service Card for more information

Association and Society News

● Howard M. Palmer, general sales manager of Lewis-Shepard Products, Inc., recently elected president of the Material Handling Institute has assumed the assignment of chairman of the Industry Educational Committee. In this capacity, his principal task will deal with an extensive program of educational work with the universities and colleges of the country.

● The Philadelphia Regional Division of the Society of Industrial Packaging and Material Handling Engineers presented Alvin S. Roberts. National secretary with an honorary life membership recently. This was in recognition of his outstanding services, particularly in connection with the presentation of the "short course" in Chicago in 1946 and in Philadelphia in 1951.

● The Wisconsin Chapter of the Industrial Packaging and Material Handling Engineers at their meeting on Feb. 26 heard a talk on military packaging. Speaker was Clint K. Royce, former vice-chairman of Navy packaging board. Another speaker, A. Barkow, talked about export packaging.

● Carl F. Sprague of Sherwin Williams Co. spoke on "Package Engineering and Material Handling" at the last meeting of the Cleveland Chapter of the American Material Handling Society. Sprague is manager of the department of packaging at Sherwin Williams.

● The Albany District chapter of the American Material Handling Society, heard a discussion on "What is Material Handling?" Speaker was Matthew W. Potts, Material Handling editor of Distribution Age. Chairman of the meeting was J. M. Broady, Schenectady Works, General Electric Co.



ROSS Fork Truck KEY MEMBER of HANDLING TEAM at Reserve Terminals Company

Mr. J. C. DeVenne, President, states that its unusual flexibility, plus its efficiency in performing a great variety of handling assignments ... outdoors as well as in ... make their Ross Series 15 a key factor in the efficiency of the entire handling system.

The rugged Ross Series 15 features balanced weight distribution, big pneumatic tires, powerful hydraulic system, many other top-performance features that contribute to low-cost materials handling. That's why it's first choice wherever loads are big, heavy and cumbersome ... wherever operating conditions are tough. That's why it will pay you to select ROSS. Send for details.



THE ROSS CARRIER COMPANY

Direct Factory Branches and Distributors Throughout the World

Miller St., Benton Harbor, Michigan, U.S.A.

Circle No. 20 on Reader Service Card for more information

NEWS VIEWS TRENDS

FACTS ON RUBBER BELTING

If you are now using rubber belting or if you plan on using it in the future, be sure to see Part I of a two-part survey which begins in this issue. This month's installment covers types, construction and selection of rubber belting. Important tables for determining belt specifications are included. Next month's article will detail rubber belting maintenance.

NOTE IN YOUR FILE: NEW LOCATIONS

K. W. Battery Co., industrial battery manufacturer has moved into a new plant, research laboratory and office building in Skokie, Illinois.

Motorola's Communications and Electronics Division has been relocated in a new building at 4501 W. Augusta Blvd., Chicago, Illinois.

Pack-Rite Machine provides larger and improved facilities for manufacturing heat-sealing packaging machinery at its new address, 407 East Michigan Street, Milwaukee.

Potdevin Machine Co., manufacturers of a wide variety of paper bag and printing machinery and coating machines has built a new building with manufacturing space of about 102,800 sq. ft. It is located at 285 North St. Teterboro, N. J.

Rowe Methods, Inc., makers of Adjust-A-Docks, have moved to new and larger quarters located at 2534 Detroit Ave., Cleveland 13, Ohio.

DON'T THROW DOLLARS AWAY

Maybe your plant is not like a lot of others which are literally throwing money away because of poor handling at work stations. But if it is, you may be interested in the round-up in this issue which has the title "Check Your Positioning Methods." Ten different types of positioning equipment are pictured. Don't miss it.

WHEN YOU'RE HANDLING PAPER

You know yourself that handling and storing rolls and loads of flat sheets of paper can be quite a job. You have to put speed into the operations, yet protect the easily damaged material. In the story "15 Ways To Handle Paper" you may find your answer to your handling and storage problems. Often, a plant's present equipment can do the job.

YOU DON'T SHIP WATER IN BAGS

At least we've never heard of it. Yet many companies do not use the right type of container to ship their products. Maybe your high damage claims are a result of an incorrect container. In any event, it will pay you to see the survey on containers which appears in the Packaging & Shipping Section of this issue. More than 50 different types are pictured and described.

LIGHT METALS MAN OF THE YEAR

Edward S. Christiansen, president of Christiansen Corp., Chicago and of its three wholly-owned subsidiaries, has been named the "Light Metals Man of the Year" by Modern Metals magazine. This is an award which is given annually to the individual whose contribution to the light metals field is considered the greatest. The companies built by Christiansen in addition to the parent company include Magnesium Co. of America, Alumicast Corp., and Industrial Smelting Corp.



Alfred's got the soft job

(H E N E E D E D I T)



That old lift truck Alfred used to command finally broke down. The company junked it and Alfred didn't fret. Now he's got a new one equipped with MONARCH MONO-CUSHION TIRES—just like the rest of us. Alfred's happy, the company's happy—Alfred gets a soft ride, the company's saving money on floor and truck maintenance.

Your best source for replacement tires is the manufacturer of your vehicles, who can supply you, through his distributors, with Monarch Tires engineered for your application.



**THE
MONARCH
RUBBER COMPANY**

501 LINCOLN PARK • HARTVILLE, OHIO
DETROIT OFFICE, 7-255 GENERAL MOTORS BUILDING

SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS

Circle No. 21 on Reader Service Card for more information

**"CATS AND
DOGS" DIS-
CARDED BY
MILITARY**

Standardization of material handling under the new Air Force Packaging and Material Handling Board will eventually eliminate "cats and dogs," obsolete fork lifts, cranes, conveyors and similar equipment from military installations. Extinction of some 300 old models in favor of about 70 up-to-date ones should result in estimated savings of \$15,000,000 annually in procurement of spare parts and conservation of manpower through this program. The new equipment standard -MIL- STD-137 may be obtained from military procurement agencies or the superintendent of documents, Government Printing Office, for ten cents per copy.

**NEW OWNERS
FOR INDUS-
TRIAL MONO-
RAIL**

Morris, Wheeler & Co., Inc., of Philadelphia, has acquired the Industrial Monorail and Conveyor Co., a division of the W. H. Sink Iron Works. The new division will continue to manufacture monorails and motor-driven manual and jib cranes in standard and custom-made models, and will sell them under the trade name of MorLift. R. T. Wiley, who directed operations of the purchased company, will continue as manager of the Monorail & Crane Division of Morris, Wheeler & Co.

**NEWS FROM
CASTER &
FLOOR TRUCK
ASSOCIATION**

The Traffic Committee of the Caster and Floor Truck Manufacturers' Assoc. was addressed by Joseph C. Colquit, Commissioner of the Motor Freight Classification Board, at its last meeting in the Wardman Park Hotel, Washington. In his talk, Colquit spoke on the subject, "Some Aspects of Classification Work of the Motor Carrier Industry." Chairman of the meeting was C. H. Strauss of Ironbound Box & Lumber Co. Others in attendance were: J. M. Davison, the American Pulley Co.; John Tiernan, the Bassick Co.; R. C. Stockton, the Bassick Co. (Stewart-Warner); R. W. Alexander, Electric Wheel Co.; J. S. Hanson, the Fairbanks Co.; H. K. Rogers, Faultless Caster Corp.; L. P. Aurbach, Flow Magazine; Paul C. Haas, the Haas Corp.; A. L. Kotler, Milwaukee Truck & Caster Corp.; S. L. Hallett, Modern Materials Handling; J. W. Cross, the Monarch Rubber Co.; G. S. Allen, Nutting Truck & Caster Co., Inc.; L. C. Conner, Orangeville Mfg. Co.; W. F. Pruyne, Saginaw Products Corp.

**BRITONS TO
DISCUSS
AMERICAN
METHODS**

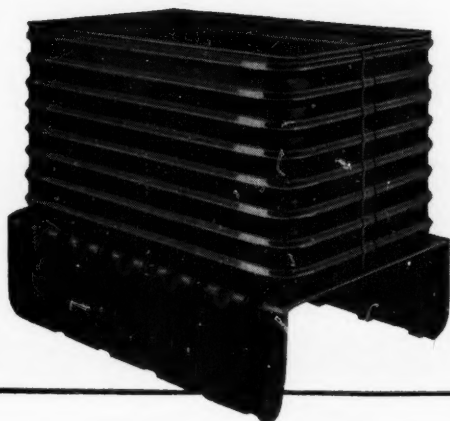
The British mechanical aids team which came to the United States in 1949 to study American methods of mechanical handling will discuss that visit at the Third Mechanical Handling Convention and Exhibition in London this spring. In addition to their discussion, papers of interest to the trade will be read, and an exhibition of equipment will be held in Olympia Hall from June 4 to 14.

**PAISLEY SEALS
BUSINESS DEAL**

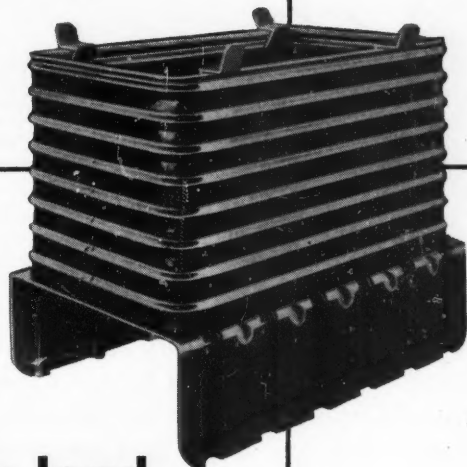
Paisley Products, Inc. recently purchased the plant, equipment, formulas and manufacturing processes of Layton Elastic Glue Co., Chicago. The acquisition will be operated as a subsidiary of the Paisley Co. with the present technical and plant staff.

**GAIR BUILDS
AND BUYS**

Robert Gair Co., Inc. has completed building a large up-to-the-minute shipping container plant at Teterboro, New Jersey. Most of the present box shop personnel at Gair's Bogota division will move to the new location. The Company has also signed a contract providing for the sale by Owens-Illinois of the manufacturing plants, business and inventories of its American Coating Mills Div. as of April 1. Under the transaction, Gair will acquire paperboard mills at Elkhart, Indiana, and Middletown, Ohio, and carton fabricating plants at Elkhart, Chicago and Grand Rapids.



Type PB-120
Steel Box and Platform Units
Reduce manual labor, speed up production and are economical in saving floor space. Their initial cost is small.



Type PB-120T—Box and Platform Units with Tiering Lugs

Units provided with tiering lugs securely welded to the top of each box give greater box capacity because boxes can be the full width of the platform. Standard units with or without channel runners are available.

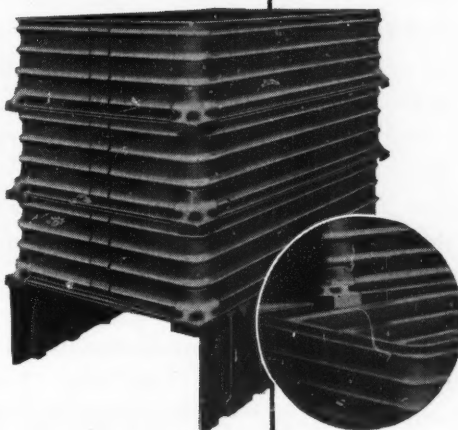
ABILITY

to carry the load



Type PB-130
Removable Box Units Equipped with Corner Stacking Brackets

Brackets securely welded to the bottom corners of each box section permit easy removal and material is always near the top. Tiering lugs can be provided on a number of these boxes which when used as top sections provide facilities for tiering complete units.



• Truscon Steel Box and Skid Platform units in various sizes to fit individual requirements are fabricated from heavy gage steel sheets of uniform thickness, into which deep reinforcing ribs are pressed to produce maximum strength and rigidity. The skid platforms of these units can be equipped to meet specific requirements of any industry. They can be used for any type of commodity, with hand or power lift trucks or cranes. Where desired, corner stacking brackets which fit over the corner of the platform or box are securely welded to the bottom corners of each box section assuring rapid and secure assembly.

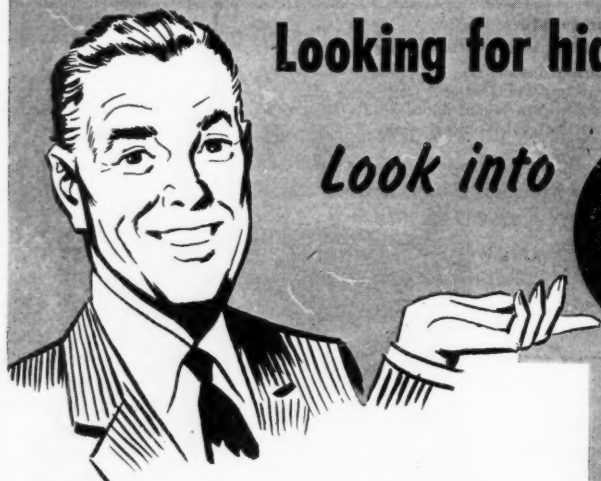
Write for illustrated literature describing the line of Truscon Steel Boxes and Skids available.



TRUSCON® STEEL COMPANY PRESSED STEEL DIVISION

6202 Truscon Avenue, Cleveland 4, Ohio • Subsidiary of Republic Steel Corporation

Circle No. 22 on Reader Service Card for more information



Looking for hidden sources of profit?

Look into

KENNETT Materials Handling Equipment

With rising costs on every hand, one vital place to look for savings is your materials handling equipment. If it is obsolete or inadequate at any point, unnecessary labor costs may exist.

For over 30 years our exclusive job has been the design and construction of specialized handling equipment to do certain things under certain conditions. That's why we say we may assist you in finding hidden sources of profit with Kennett Handling Equipment.

We have offices and engineers in principal cities and therefore can study right on the spot the handling problems to be solved and then design and build the right equipment for the specific purpose.

If you have a handling problem, let us hear from you. Kennett Materials Handling Equipment pays its own way. Use the coupon below for quick action.

FIBRE SPECIALTY MANUFACTURING COMPANY
KENNETT SQUARE, PENNSYLVANIA

Fibre Specialty Mfg. Co.
Kennett Square, Pennsylvania

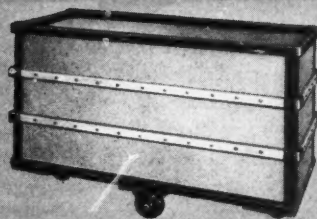
We are interested in reducing handling costs

- ☐ Have your representative call
☐ Send your complete Catalog

Firm Name _____

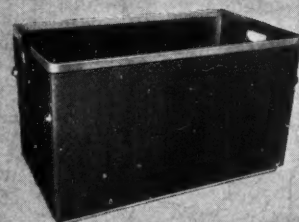
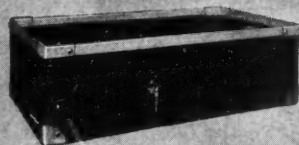
Address _____

by _____



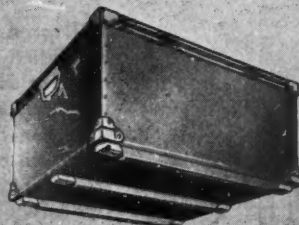
TRUCKS FOR EVERY PURPOSE

Made to order any size. Available in hard vulcanized fibre, resin bonded plywood veneered with hard vulcanized fibre, or from steel veneered to both sides of waterproof core.



TRAYS FOR EVERY PURPOSE

Made in any type and size from hard vulcanized fibre, also from "Fiberglas" Reinforced plastic (various colors) for stacking or nesting. Light, strong, inexpensive.



TOTE BOXES FOR EVERY PURPOSE

Available in any type and size to your specifications. Made from hard vulcanized fibre or "steel-kid" fibre. Weight reduced to minimum without loss of strength.

THE HIDDEN COST OF MATERIALS HANDLING CAN BE THE DIFFERENCE BETWEEN PROFIT AND LOSS

Circle No. 23 on Reader Service Card for more information

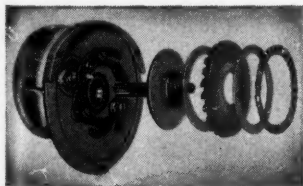


There's a
YALE hoist for
every
lifting job!

CAPACITIES:
½, 1, 1½ and
2 tons

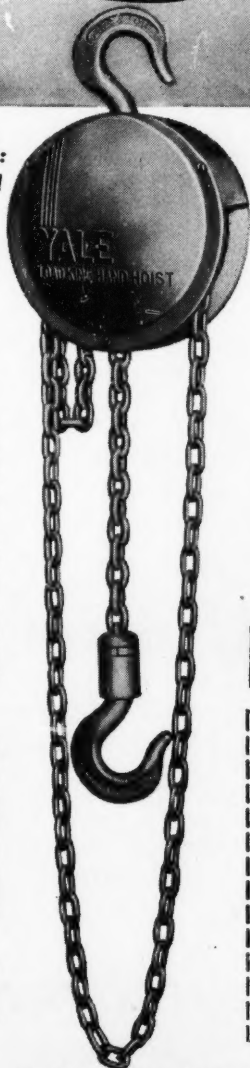
THE LOAD KING ALUMINUM HAND HOIST

is light in weight, efficient in performance and truly portable. Half-ton model weighs only 36 lbs. Precision engineering, and ball bearings in all rotating shafts minimize friction, raise hoist efficiency up to 95 per cent. The Load King's many safety features include SYNCHRO-MATIC Load Brake, Alloy Steel Gears and fractureproof steel Safety Hooks.



Only the YALE Load King

gives you the safe, sure, efficient action of the SYNCHRO-MATIC Load Brake.



If your problem is to save manpower—increase production—speed lifting of any weight from 500 lbs to 40 tons—get in touch with YALE. For YALE has pioneered in the development of safer, more efficient hoisting equipment of every kind. That's why your YALE Distributor can give you such valuable assistance in choosing the *right* hoist for your particular needs. He's listed in your Classified Directory, and ready to help you any time.

The Yale & Towne Manufacturing Co., Phila. 15, Pa.

YALE is a registered Trade Mark of The Yale & Towne Manufacturing Co.

YALE & TOWNE

MAIL THIS COUPON TODAY

The Yale & Towne Manufacturing Co., Dept. 43A
Roosevelt Blvd. & Haldeman Ave., Phila. 15, Pa.

I'm interested in lifting for less with a YALE Hoist.

- ☐ Please have your local Distributor call on me.
☐ Please send detailed literature on ☐ YALE Hand Hoists.
☐ YALE Electric Hoists.

Company _____

Name _____

Title _____

Street _____

City _____

State _____

In Canada write: The Yale & Towne Manufacturing Co., St. Catharines, Ont.

YALE GAS AND ELECTRIC INDUSTRIAL TRUCKS • YALE WORKSAVERS • YALE HAND TRUCKS

Circle No. 24 on Reader Service Card for more information

FLOW • MARCH, 1952

Exide-Ironclad

BATTERIES

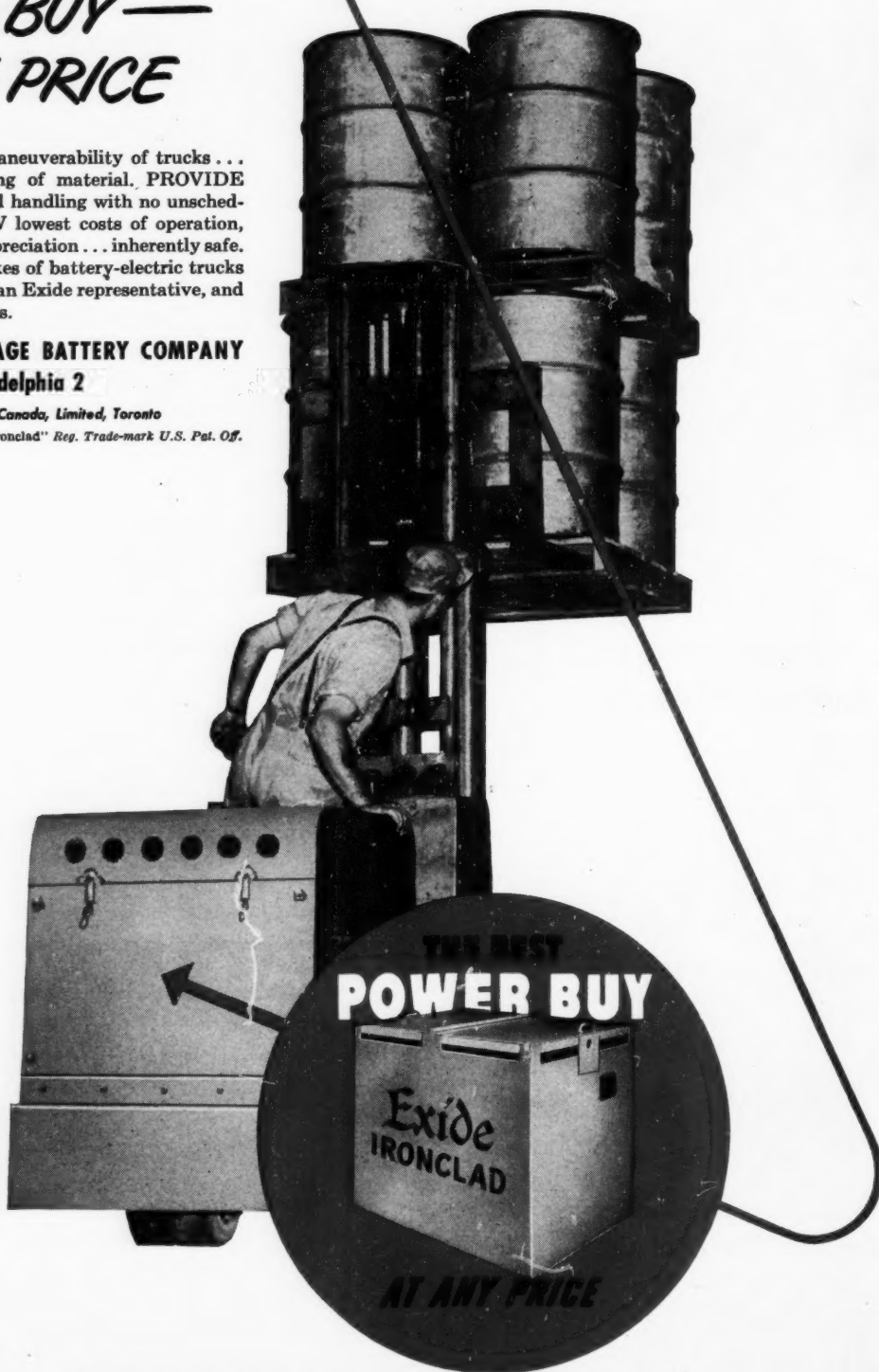
ARE YOUR BEST POWER BUY— AT ANY PRICE

They ASSURE high maneuverability of trucks . . . rapid, accurate handling of material. PROVIDE uniform rate of material handling with no unscheduled down time. SHOW lowest costs of operation, maintenance, repair, depreciation . . . inherently safe. For all types, sizes, makes of battery-electric trucks —hand or rider. Call in an Exide representative, and let him prove these facts.

THE ELECTRIC STORAGE BATTERY COMPANY
Philadelphia 2

Exide Batteries of Canada, Limited, Toronto

"Exide-Ironclad" Reg. Trade-mark U.S. Pat. Off.



news from the SALES FIELD



Maynard W.
McMillan



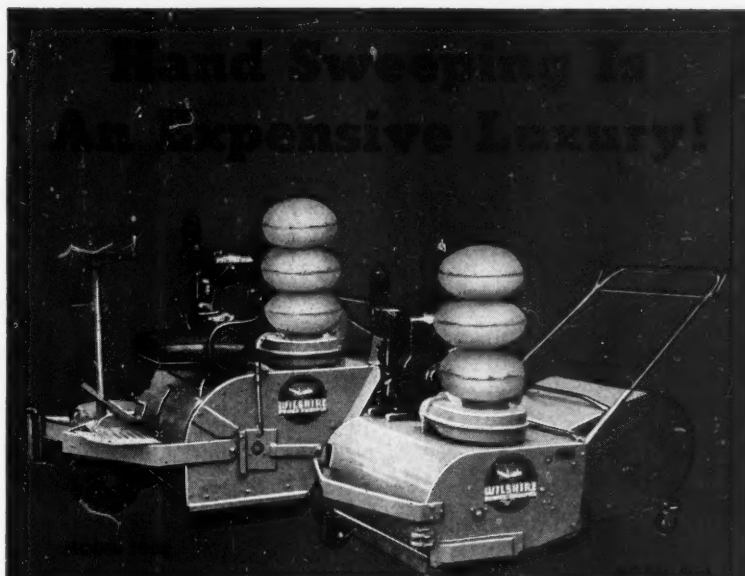
Robert C. Brady

● Robert C. Brady, former research director for the Material Handling Institute, Inc. of Pittsburgh, has joined the W. B. McClelland Co. This material handling equipment sales organization is located at 16104 Kinsman Rd., Cleveland, Ohio.

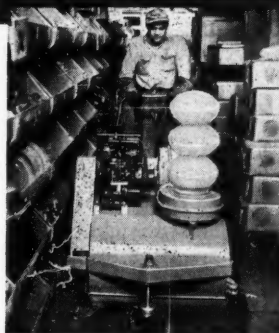
● Sales District Six representative of The Frank G. Hough Co. is Gene Thomas, who will work with Hough distributors in Washington, Oregon, Idaho, Montana and Wyoming on the application of the firm's tractor-shovels to the contracting, public works, logging, mining and industrial fields.

● The Ohio Equipment Company, Inc., 1220 West 9th Street, Cleveland, Ohio, has been appointed sales representatives for the Revolver line in the Cleveland area. Since 1919, this firm has specialized in intra-plant material handling equipment.

● Maynard W. McMillan has been appointed representative for the Baker line of industrial trucks in the southwestern Ohio territory, according to The Baker-Raulang Company, Cleveland. His headquarters will be at 2820 Jessup Road, Cincinnati, and his territory includes Cincinnati, Hamilton,



**THERE'S A
WILSHIRE POWER SWEEPER
TO FIT YOUR NEEDS
IT CUTS YOUR SWEEPING COSTS 75%
(A Free Demonstration Proves It)**



WILSHIRE sweeps inside, right up to walls, posts, down narrow aisles; faster and cleaner than a man with a broom.



WILSHIRE sweeps outside areas, too — parking spaces, plant yards, driveways, sidewalks, etc.

YOU SAVE ALL THESE WAYS WITH WILSHIRE POWER SWEEPERS

You save manpower for more productive work; that means you cut sweeping cost because 1 man with a WILSHIRE Power Sweeper sweeps as much area per hour as 5 to 10 or more men with brooms. WILSHIRE sweeps without dust; that eliminates sprinkling and sweeping compounds. WILSHIRE sweeps cleaner because the patented "Duscon" system sorts the dust from the debris.

A SIZE FOR EVERY PURPOSE

Five WILSHIRE Models for sweeping 27", 36" and 48" swaths. For all types of sweeping from light to heavy duty. Easy to operate; easy to maintain. A survey enables us to recommend the Model and Size best suited to your needs.

Write or wire for the name of your nearest WILSHIRE Dealer. He will give you a Free Demonstration in your own plant.

SWEEPING THE COUNTRY
SINCE 1940



WILSHIRE POWER SWEEPER

526 West Chevy Chase Drive
Glendale 4, California

IN CANADA — PLANT MAINTENANCE EQUIPMENT CO. — VANCOUVER & TORONTO
Circle No. 26 on Reader Service Card for more information

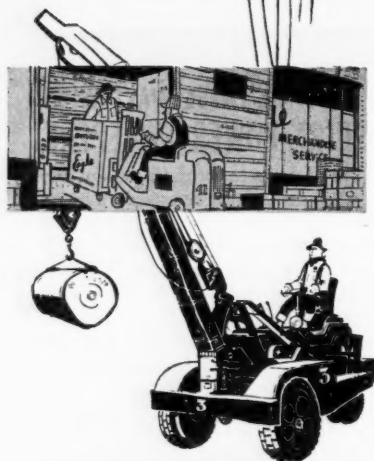


MO-PAC

opens new

TERMINAL

to serve shippers



ST. LOUIS... gateway to the great West-Southwest... is the site of our spacious, new freight station. Covering three city blocks, the terminal is designed for the highly efficient handling of less-than-carload shipments. Its 12 enclosed tracks accommodate 180 cars.

With its completion, all of MISSOURI PACIFIC's *St. Louis Gateway* freight station operations are concentrated at one location, pickup and delivery services simplified, time-consuming station to station transfers eliminated, and possibility of damage to freight in transit materially reduced.

The completion of the terminal marks one more milestone in MO-PAC's continuing program to bring ever better service to its patrons.



Circle No. 27 on Reader Service Card for more information

Middletown, Dayton, Springfield and Portsmouth in Ohio; Covington and Newport in Kentucky and Lawrenceburg, Indiana. **Emory N. Mumma**, district representative in Philadelphia, is opening a branch office at 100 South Gay Street in Baltimore, Md., with **Edward G. Matthew** as manager.

● The newly established firm of **Robert M. Slife & Associates, Inc.** has been named Cleveland area sales and service representative for the Automatic Transportation Company, Chicago. Slife, who will serve all of Northeastern Ohio, has made his headquarters at 3744



Prospect Avenue, Cleveland. The new organization succeeds Nook & O'Neill, Inc., with which Slife has long been associated, as Automatic's representative. He has been in the materials handling sales field for almost a decade. Earlier, he was with Midwest Service, Inc., and Parker Refining company.

● Trackson Company of Milwaukee, a producer of tractor-mounted machines, has become a wholly-owned subsidiary of Caterpillar Tractor Co. **Louis B. Neumiller**, president of Caterpillar, will be chairman of a reconstructed Trackson board of directors which will include **Walter H. Stiemke**, Trackson president, and the following Caterpillar officials: **William Blackie**, **Ralph M. Monk** and **J. R. Munro**.

Turn to page 156

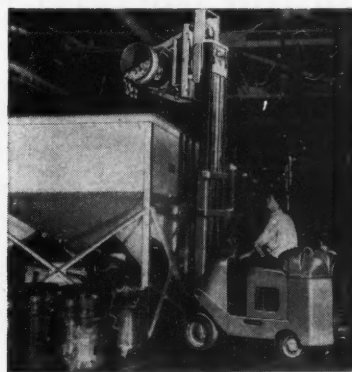
B.F. Goodrich



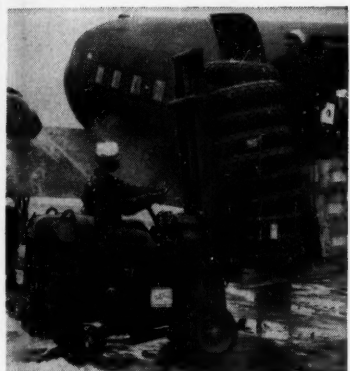
Temporary storage of perishables



Hauling materials for loading



Transporting material for processing



Hauling materials



Moving cooling racks



Inter-plant hauls

TW ANALYSIS

POINTS THE WAY TO SAVINGS
FOR ALL MATERIALS HANDLING

Here's the TW Analysis Plan:

- Specially-trained BFG representatives will analyze your operation.
- They'll study your equipment, floors and hauling surfaces.
- They'll make impartial recommendations regarding tire and wheel types and sizes.
- They'll help you—or your materials handling engineers get better service from your industrial tires and hauling equipment.

Use the coupon for complete information.

*A similar plan is available for manufacturers
of industrial hauling equipment.*

only B. F. Goodrich has a complete line of industrial tires.



The B. F. Goodrich Co.
Department TW-165
Akron, Ohio

Please give me additional information on your
new Tire and Wheel Analysis plan.

Name _____

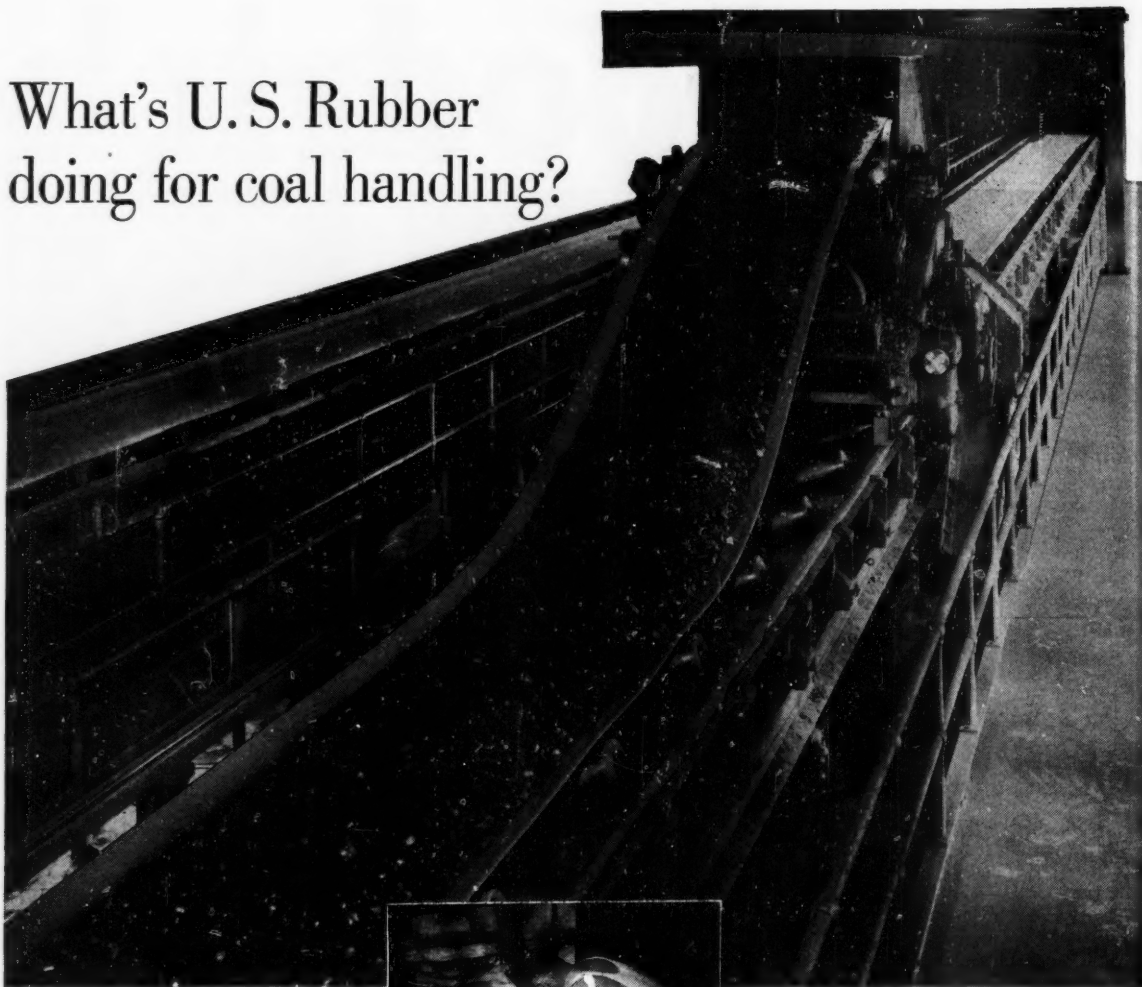
Title _____

Company _____

City _____ State _____

Circle No. 28 on Reader Service Card for more information

What's U. S. Rubber doing for coal handling?



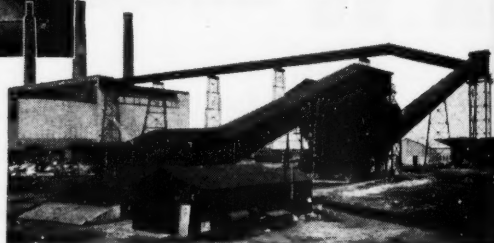
THIS NEW U.S. CONVEYOR BELT (above) 42 inches wide, 1,984 feet long, weight 18 tons, replaced the earlier "U.S." belt that had been 21 years on the job. The original belt traveled 231,818 miles, almost equivalent to a trip to the moon, before being replaced.



SPlicing ON THE JOB is a U. S. Rubber specialty. It took the man on the left and his fellow-workers 12 hours to install the belt — a record-breaking time—thanks to the cooperative planning between the "U.S." engineers and the operator.

"U.S." makes conveyor belts that last longer. This particular belt installation in a mid-west electrical generating plant replaced a 21-year-old belt that had a record run of service. It can be fully expected to give an even finer performance.

The technical progress made by United States Rubber engineers in belt construction is enabling mine operators and coal handlers to increase output and decrease their operating costs. Your materials-handling problem is never too big or complex for "U.S." belting specialists. Contact them through the address below.



THE OLD U.S. CONVEYOR BELT traveled this near-1000 foot runway at a rate of 360 feet per minute — delivered over 17 million tons of coal — gave continuous trouble-free service in its long history.

PRODUCT OF



UNITED STATES RUBBER COMPANY

MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

Circle No. 29 on Reader Service Card for more information

**"NOT A DAMAGED
PART IN A
CARLOAD"**

thanks to Union Steel...

HANDLING BASKETS

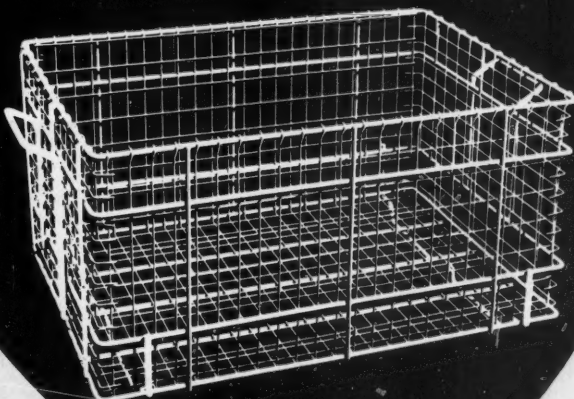
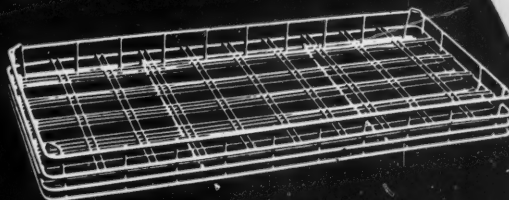
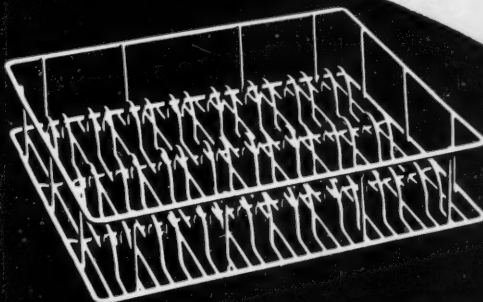
Union Steel builds handling baskets to protect those precious precision parts through every production phase from raw material to final shipment.

Smooth, sturdy wire shapes permanently electro-welded to form a resilient, dependable basket or frame to carry and protect rough forgings or delicate parts and instruments.

USP Handling baskets are economical. They increase production speed through degreasing, cleaning, storing, handling and shipping operations.

USP baskets are readily available, in quantity, to meet every handling requirement—designed and built to your specifications.

For greater savings, increased production and small part protection, write, wire or phone Union Steel today—



UNION STEEL
PRODUCTS CO.

Materials Handling Equipment Division
ALBION, MICHIGAN

Manufacturers of Industry's most dependable Materials
Handling Equipment—USP Pallets and Palletainers

Circle No. 30 on Reader Service Card for more information

specialty.
workers
breaking
between

000 foot
over 17
e service

N Y

FLOW



(Right) ELECTRIC EYES located at the hump of this conveyor count the packages that pass. If the light beam is cut off for more than 30 seconds, the electric eye automatically stops the belt to prevent any jam-up damage to cartons.



(Above) all ele
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(Left)
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Gearm
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unit is
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CO-ORDINATED electrical system for conveyors boosts production 50%

Here's a good example of what Westinghouse *co-ordinated* conveyor systems can do for your plant. This system, installed at one of our own lamp warehouses, increased production by 50% per man-hour and cut lamp breakage in half.

Centralized Control Helps Operations

The new system consists of a number of conveyor lines—all interlocked electrically and controlled from one place. The entire system is started and stopped automatically. It's simple and fast.

Electric Eyes Control Flow of Packages

Westinghouse Photo-trols® are used on several of the conveyor lines to count the packages moving on the belts and also to stop the belt if the light beam is shut off for more than 30 seconds. This prevents jam-ups and reduces breakage. This co-ordination of motors and motor control with electric eye devices may have many possibilities in your plant.

Investigate Electrically Co-ordinated Systems

If you're planning a new conveyor system, investigate the many possibilities of an electrically co-ordinated system of this type. Westinghouse makes complete drive equipment for your job and can help you apply it. Call your Westinghouse Office early in the planning stage.

J-94929

(Above) CENTRALIZED WARNING PANEL for all electric eyes is shown in back of the operator. This co-ordinated control helps account for the high efficiency of the plant. Westinghouse can develop these co-ordinated systems for you.

(Left) WESTINGHOUSE GEARMOTORS drive the belts that feed this spiral conveyor. Gearmotors are safe, compact, efficient. This Westinghouse combination of a Life-Line motor and a speed reducer in one unit is easy to install and requires practically no maintenance.





HOW WOULD YOU PICK 'EM?

The Sultan's making a hard choice. But, in choosing conveying equipment, yours is even more ticklish. You want *permanent* value . . . the day in, day out assurance of dependable, economical performance. That means, of course, the right equipment to suit the job. Like Rapistan. You can be sure Rapistan recommendations are right for your needs. And, that Rapistan equipment is *Better 3 Ways*:

Rapistan flexibility gives you equipment adaptable to any floor plan; relocating the line is easy as moving furniture. **Rapistan quality** assures trouble-free service by the world's "strongest per pound" conveyors with many patented features. **Rapistan value** means low original cost, immediate savings in time, space and labor. Rapistan equipment pays for itself . . .

Better see Rapistan first!



TO HELP YOU: We will be pleased to send you a free 28-page book packed with ideas on how to solve your handling problems. If you desire, we will also survey your handling needs without obligation. Write today.

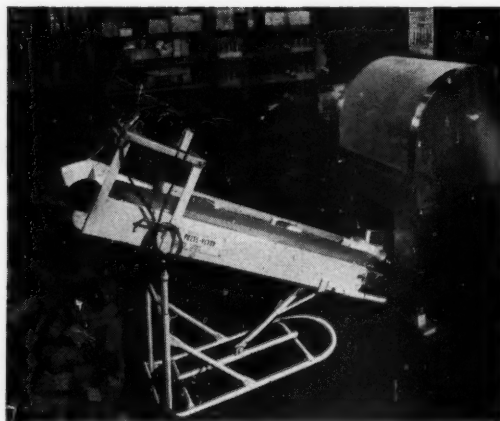
The RAPIDS-STANDARD CO., Inc.
686 Rapistan Bldg., Grand Rapids, Mich.

Rapistan®

BETTER CONVEYING EQUIPMENT

Representatives in Principal Cities

CONVEYORS • INDUSTRIAL CASTERS • WHEEL-EZY® TRUCKS



A UNIT of Rapistan equipment may smash a bottleneck for you. Here a Press-Veyor® moves finished product from machine direct to tote box, cuts time and labor handling costs. Whether you need an interfloor unit, a box car loader, or a length of the world's finest gravity conveyor . . . you'd better see Rapistan first!



A LINE of Rapistan equipment can solve a wide variety of problems. Here a portable Stevedore, Jr.® flows cartons continuously, dependably from gravity conveyor directly into the delivery truck. Fish, flowers or furniture . . . whatever you are moving, you'd better see Rapistan first!

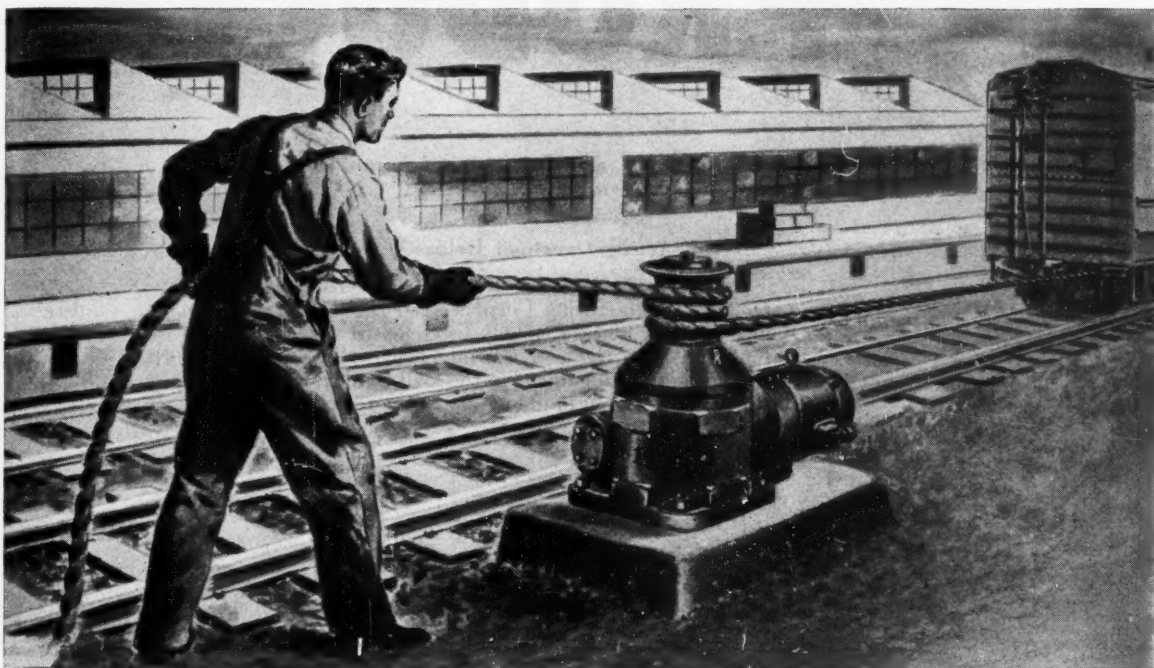


AN ENGINEERED SYSTEM by Rapistan costs less because it's formed from combinations of "standard" units . . . not high priced "specials." It speeds output and cuts costs immediately. Manufacturer, wholesaler or retailer . . . if you have a tough handling problem, call on Rapistan engineers first!

*T. M.

FGJ

Speed? Safety? Savings?... You'll get all 3 with a LO-HED CAR PULLER



IT HAS BEEN PROVED on hundreds of installations. Install a Lo-Hed Car Puller at your railroad siding, and cars will be loaded and unloaded in a lot less time than before. Besides that, with a Lo-Hed to do the job, workmen stop pushing cars by hand and you've eliminated a frequent cause of industrial accidents. And for full measure, a Lo-Hed Car Puller cuts your demurrage costs and puts a complete stop to bills for shifting charges.

The Lo-Hed Car Puller can be just as handy and thrifty *inside* a plant, too. It pulls any-

thing within its capacity that can roll or slide . . . up grades and around corners.

For new efficiency and economy, mail coupon today for the full story about the rugged, electrically-driven Lo-Hed Car Puller.

LO-HED MEANS LOW OVERHEAD

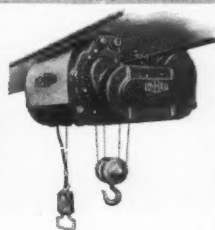
AMERICAN ENGINEERING COMPANY

PHILADELPHIA 25, PENNA.

AE Products are: Taylor and Perfect Spread Stokers, Marine Deck Auxiliaries, Hele-Shaw and Hydramite Fluid Power, Lo-Hed Hoists, Lo-Hed Car Pullers.



LO-HED HOISTS have many special advantages that bring new speed, ease and economy to materials handling. They're built for longer working life; come in five suspension types; capacities from 500 to 24,000 lbs.



American Engineering Company
2531 Aramingo Ave., Philadelphia 25, Pa.

Gentlemen: Kindly send me full information about
☐ Lo-Hed Car Pullers . . . ☐ Lo-Hed Hoists.

Name _____ Title _____

Company _____

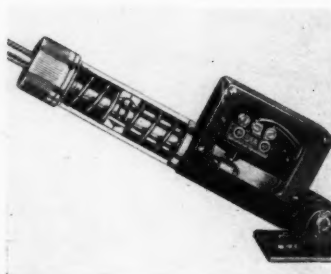
Address _____

City _____ Zone _____ State _____

Circle No. 33 on Reader Service Card for more information

NEW PRODUCTS

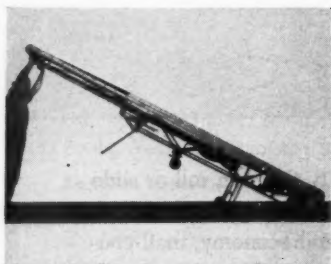
For more information on these products, use the postcard bound into this issue.



Triple-Acting Overload Release—Dodge Manufacturing Corp.

An overload release for its speed reducer has been developed by the Dodge Manufacturing Corp. Called the Tri-Matic, it operates both mechanically and electrically to 1) loosen the belts, 2) cut off the current and 3) activate a warning bell, siren, or light. The release is calibrated for adjustment to the load conditions of any job, and can be set to act at any desired load up to the reducer's maximum capacity.

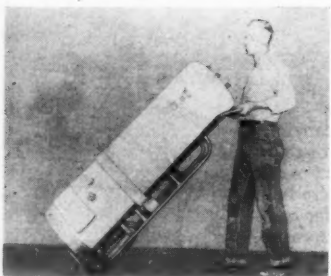
Circle No. 165 on Reader Service Card for more information



Lightweight Adjustable Conveyor—Stewart-Glapat Corp.

Here's a lightweight portable belt conveyor which is counter-balanced for handling by one man. Construction features heavy truss design to carry a total weight of 850 lbs. The unit measures 10 ft. closed and 15 ft. 6 in. fully extended. It will stack to a height of 10 ft., at a maximum stacking angle of 30 degrees. The unit weight is 625 lbs. completely assembled and is driven by a $\frac{1}{2}$ or $\frac{3}{4}$ h.p. motor. Standard equipment includes a 14 in. rubber belt.

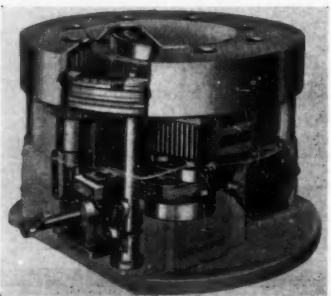
Circle No. 166 on Reader Service Card for more information



Rubber-Covered Appliance Truck—Nutting Truck & Caster Co.

There's little danger of marring finished surfaces with this appliance truck, as the front frame is rubber covered. The curved cross bars are padded, and a ratchet strap tightener makes it possible to hold appliances securely. Steps or curbs are negotiated without bumps with V-belt glides. Overall height is 60 in. and frame width is 16 in. The nose is 24 in. wide, 5 in. long. Weight of the truck is 45 lbs., its capacity is 500 lbs.

Circle No. 167 on Reader Service Card for more information



Mechanical Indexing Table—Turner Bros., Inc.

This mechanical indexing table is said to be able to move heavy loads from station to station within $\frac{3}{5}$ of a second indexing time. Standard units are available in from 2 to 26 stations, in any equal division of 360 degrees, but the table may be adapted to a larger number of stations if desired, or applied as a driving unit for indexing larger rotary tables up to 12 ft. in diameter.

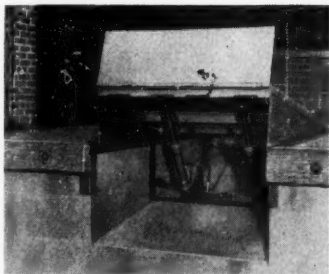
Circle No. 168 on Reader Service Card for more information



Sheet Feeding Table—Service Caster & Truck Corp.

Working levels at presses are maintained with these Electraulic tables, available in capacities up to 80,000 lbs. They are designed to operate continuously with production equipment, and may be built to operate with the press through one set of controls. Deck sizes of the machines vary from 36 in. to 54 in. wide and from 66 in. to 120 in. long. A raised height of 42 in. can be obtained, while the lowered height is 26 in.

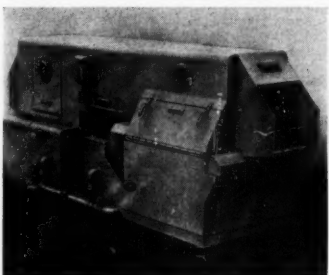
Circle No. 169 on Reader Service Card for more information



Two-Way Loading Ramps—Superior Railway Products Corp.

Loading platforms can be easily leveled to truck or railroad car heights with these two-way hydraulic loading ramps. One end of the ramp is hinged to a U-shaped steel frame so that the other end can be raised or lowered above or below the platform level. The ramps can be raised 18 in. above the platform, or lowered 9 in. below—the distance being determined by the position of the two hydraulic cylinders attached to the underside of the ramp.

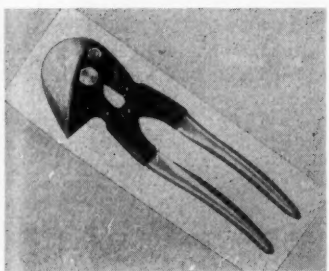
Circle No. 170 on Reader Service Card for more information



Case Washing Machine—Cesco Container Co.

This machine has two paddle wheel rotors which flush all case surfaces with a large volume of hot water at low pressure. The tips of the two rotor paddles are immersed in wash water and revolve in opposite directions, at a top speed of 24 ft. per second. The clockwise-turning rotor cataracts water over the top of the case, while the counter-clockwise rotor directs water to the under side.

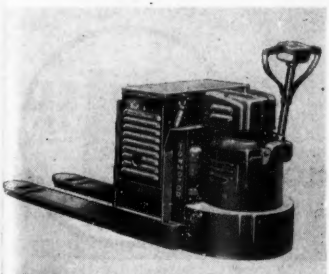
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Strapping and Wire Cutter—H. K. Porter, Inc.

The pointed end of the top cutting jaw of this shear cutter is designed to hook under tight strapping or wire, making a clean cut without damaging the contents of cartons, boxes or crates. The cutting head is alloy steel, drop-forged and heat-treated. An adjustment keeps the jaws at correct tension for proper cutting. The tool weighs 14 ounces and can cut wire as large as $\frac{3}{16}$ in., and steel strapping up to .035 by $1\frac{1}{4}$ in.

Circle No. 172 on Reader Service Card for more information



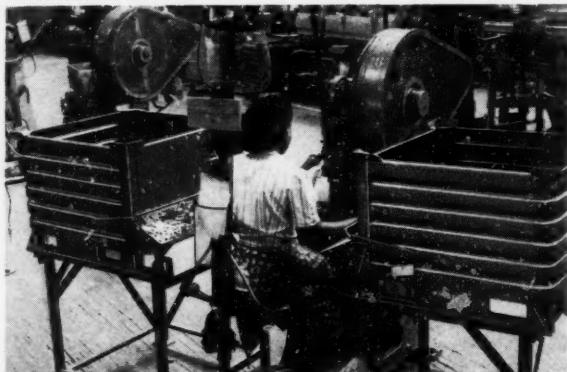
Gas-Electric Pallet Truck—Towmotor Corp.

The Towmotor Model W with Ready-Power is an adaptation of the company's standard electric pallet truck, having a small, gasoline-powered generator which supplies constant, maximum voltage for the operation of the truck. The Ready-Power mechanism is mounted in the standard battery compartment—with gasoline engine, fuel tank, starting battery and all accessories enclosed in the housing. The truck's capacity is 4000 lbs.

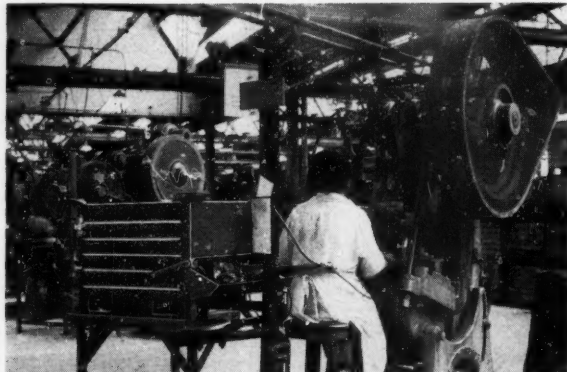
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More New Products on Page 130

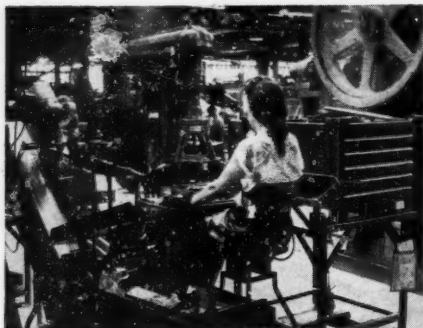
MORE THAN 30% OF THE COST OF YOUR PRODUCT IS HANDLING— SMART MATERIALS HANDLING PRACTICE PAYS DIVIDENDS



Assembling two parts is now easy. Arm level accessibility minimize operator fatigue.



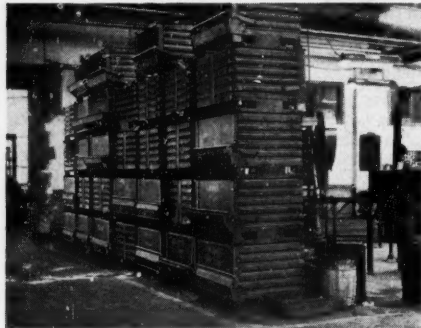
Fabricating single part. Finished part drops out back of OBI Press into second hopper box.



Operator efficiency increased by 'right level' working conditions. Conveyor feeds into hopper box at second station.



Inventory simplified. Part number and amount tagged to each box.



Utilization of air space saves valuable floor space. Fourway access provides maximum mobility.

POWELL HOPPER BOXES SLASH COSTS IN PRODUCTION ASSEMBLY OF SMALL PARTS...

A leading manufacturer processing and assembling hundreds of small parts discovered his handling costs threatened to price him out of the market. Bags, bins and buckets were cumbersome, unwieldy, difficult to handle and hard to store. Large amounts of valuable space were needed for the working stock, and inventory required hours of searching and accounting.

Powell materials handling experts were called in. A standard Powell Hopper Box was altered to fit the manufacturer's needs—a couple of conveyers were wisely positioned and a small fleet of fork lift

trucks were added—and the handling problem disappeared. The manufacturer now finds he can produce a top quality product at competitive market prices.

Many manufacturers are now beginning to appreciate the scope of importance materials handling plays in the manufacture of any product. Make sure you have the most efficient handling possible and your competitive position will be more secure. The best way to be sure is to call in the Powell man in your area—for he represents the last word in experience, service and equipment.



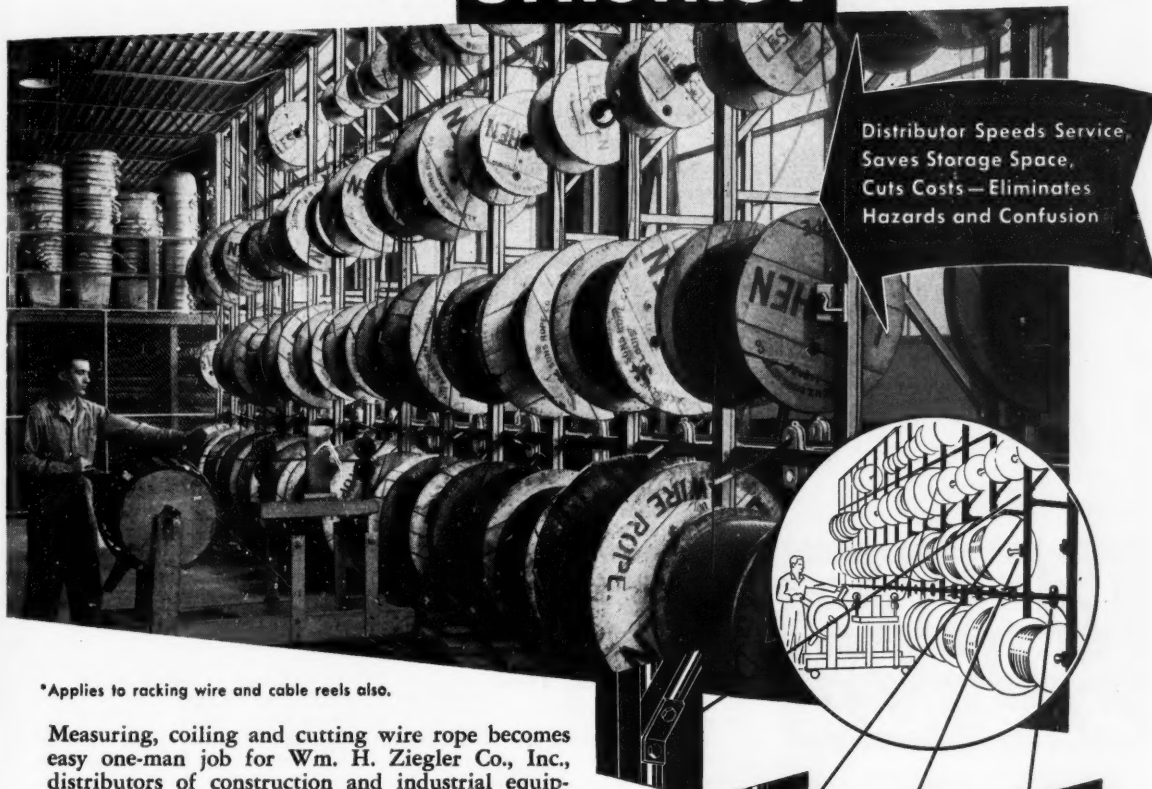
THE POWELL PRESSED STEEL CO., HUBBARD, OHIO
ORIGINATORS OF COLD FORMED ALL STEEL HANDLING EQUIPMENT

Dept. 222

(An American Invention)

Circle No. 34 on Reader Service Card for more information

wire rope handling* made easy with **UNISTRUT**® reel racks



Distributor Speeds Service
Saves Storage Space,
Cuts Costs—Eliminates
Hazards and Confusion

*Applies to racking wire and cable reels also.

Measuring, coiling and cutting wire rope becomes easy one-man job for Wm. H. Ziegler Co., Inc., distributors of construction and industrial equipment, since the installation of the new UNISTRUT reel racks in their Minneapolis and Duluth warehouses.

View shows how each reel hangs independently to permit quick selection of any size rope without disturbing other reels. Keeps working area clear, utilizes all space to ceiling. With UNISTRUT framing there is no drilling, no welding, no special tools or equipment needed. Engineering is simplified—all you do is cut channel to size and bolt fittings in place. The UNISTRUT system is easy to work with, completely adjustable, provides great strength without bulk. Give it a trial in your business.

Channel and
Fittings

Axle Support
Fitting

Rope Guide
Assembly

For Defense Production—Every day the value of UNISTRUT products is being proved by their use in Defense Industries and Armed Services installations where flexibility, and assembly and erection speed count most.

**Representatives and Warehouse Stocks in
Principal Cities—Consult Your Telephone Directories**

UNISTRUT Products are Bonderized

U. S. Patent Numbers
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2345650 2363382
2380379 2405631
2541908
Other Patents Pending

Only UNISTRUT

offers this Spring-Held Clamping Nut which ties together both sides of the slotted channel and forms a Box Section at points of connection for greater load strength.

The World's Most Flexible
All-Purpose Metal Framing

Write today for your **FREE** copy

of 24-page, fully illustrated Catalog No. 600—Racks you can build with UNISTRUT metal framing. Includes full description of 46 different kinds of UNISTRUT racks, drawings and complete ordering information.



UNISTRUT PRODUCTS COMPANY

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☐ Rack Catalog No. 600

☐ UNISTRUT Sample

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COMPANY _____

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Scales



HOWE

Two and Four Wheel
Hand Trucks



The **HOWE SCALE CO.**
RUTLAND, VERMONT

Dept. F3 Rutland, Vermont

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HOWE CONDENSED SCALE CATALOG NO. 11 ☐

HOWE HAND TRUCK CATALOG NO. 15-B ☐

Name

Title

Company

Address

City State

Circle No. 36 on Reader Service Card

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An Easy Index to This Month's Advertisers

Looking for a particular type of equipment? Listed below are the advertisers in this issue according to the type of product they manufacture. While each company is not listed under every product they make, we have attempted to make your job a little easier by listing them as often as possible.

Because of space limitations, we were forced to list some companies under the category "Specialized Equipment". Under this classification you will find such items as motors, hydraulic tail gates, powered barrows, line markers, etc. We suggest that for any equipment other than that listed under the main headings, you consult the advertisers under this category.

And for additional information on all types of material handling equipment, be sure to use the Reader Service Card for data found in the new product and free literature sections of this issue.

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To meet the varying needs of users, the CLARK electric fork-truck motors are designed to operate efficiently on any power supply from 30 to 48 volts. CLARK'S standard power supply is 36 volts. These trucks are designed with perfect balance among all components and incorporate a new method of motor winding which provides more efficiency than has ever been offered in an industrial truck motor. . . . There have been many technical changes from year to year in CLARK machines, but there has never been any change in CLARK'S 30-year purpose to give you the best VALUE your money can buy—and there never will be.

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AND POWERED HAND TRUCKS INDUSTRIAL TOWING TRACTORS



INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 13, MICHIGAN

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☐ Basic Facts Book. ☐ Have Representative Call.

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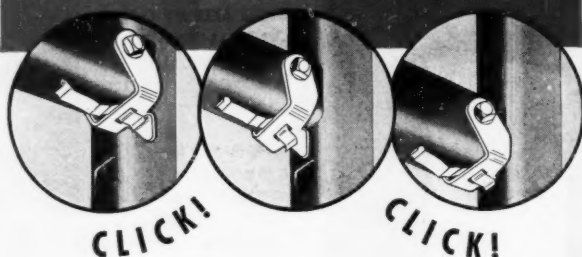
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AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

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AMERICAN **RATCHET RACK**

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- No waste space ... more storage space per sq. ft.
- Built for any size pallet skid or box.
- Let us tell you more ... send for literature.



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PRODUCED BY
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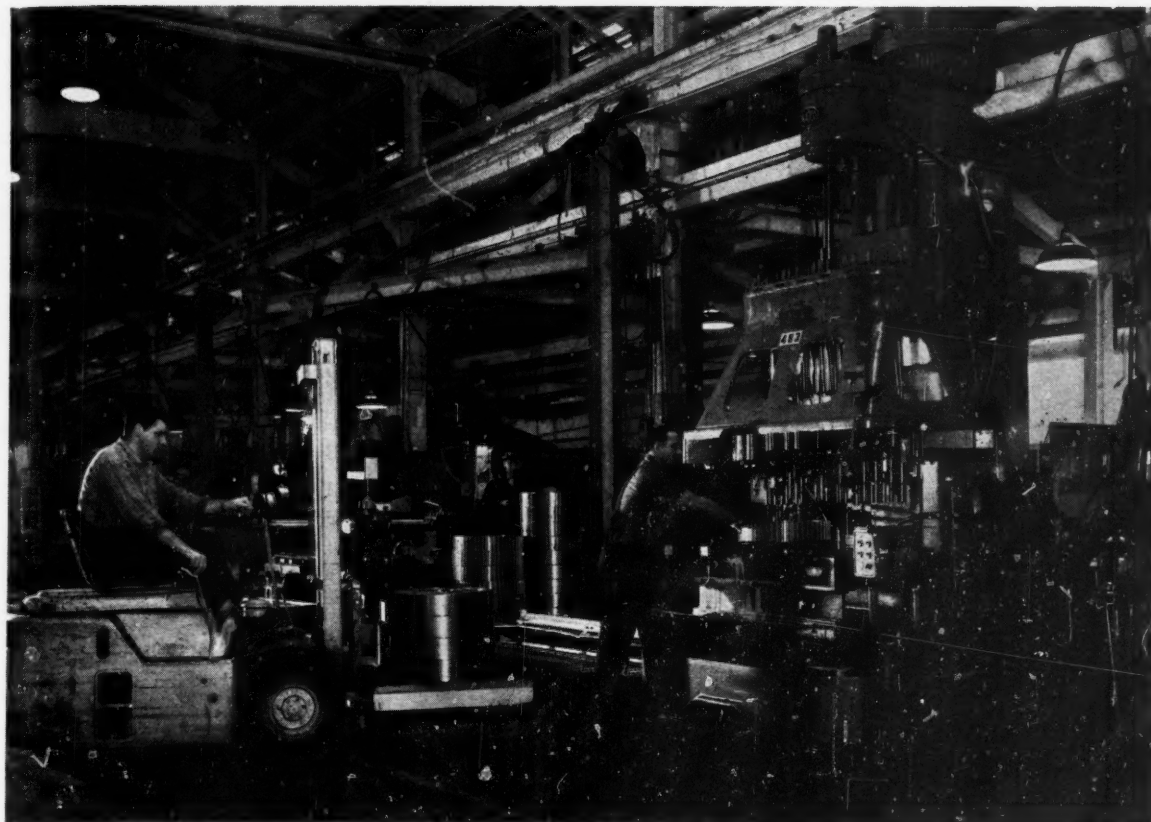
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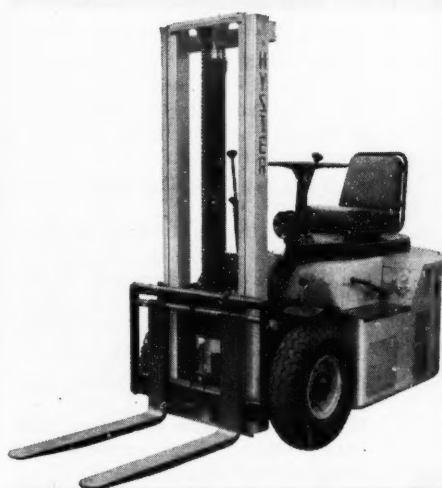
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Many MANUFACTURING PLANTS Use HYSTER® 20 Lift Trucks



HYSTER 20 (2,000 lbs. capacity) comes in 6 model variations. The complete Hyster line has capacity ranges from 1,000 lbs. to 30,000 lbs. Write for literature.

MATERIALS HANDLING SUPERVISORS like the Hyster 20 because it transports fast, stacks high, gets in and out of tight places, rolls on pneumatic tires; is rugged and powerful.

OPERATORS like it because Hyster steers easily, carries and lifts loads smoothly, takes indoor and outdoor jobs in stride.

MANAGEMENT likes it because Hyster deals a low blow to materials handling costs — slashes manufacturing and warehousing overhead and adds to net profits.

See your Hyster dealer for an eye-opening demonstration and a list of owners. Or write for literature.

HYSTER COMPANY

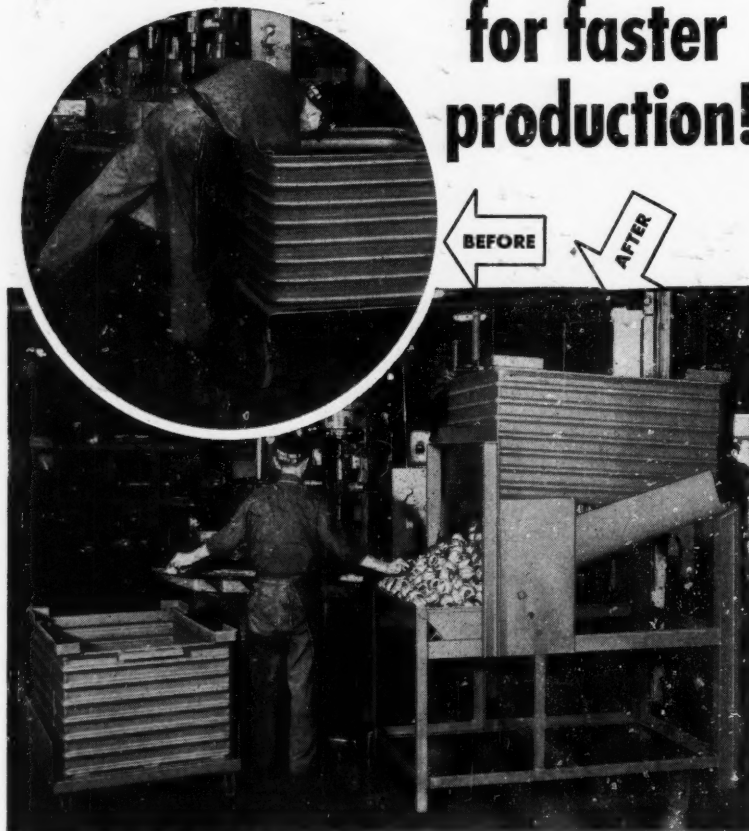
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TAKE OFF THE BRAKES for faster production!



HERE'S a new development in materials handling technique right now increasing production up to 50% in job after job! It's the new *Work-O-Matic drop-bottom production box and positioning stand.

What's it worth to you to save your machine operators thousands of tiring, time-wasting stoops-and-stretches a day? That's one thing Work-O-Matic units offer you—greater efficiency, increased production, lower cost!

The drop-bottom Work-O-Matic automatically feeds parts at proper work level. Moreover, the stand's

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To top it off, the Work-O-Matic box does everything any ordinary box does . . . and more! Tiering, moving and storing of unit loads, plus time-saving mechanical discharge!

Get the whole story and you'll see why production men everywhere are welcoming this new development. Write to The Union Metal Manufacturing Co., Canton 5, Ohio, for illustrated Folder MH-809 and typical T & M Studies.

*Patent No. 2,445,038.
Other patents pending.

UNION METAL
Materials Handling Equipment

Literature featured in ads

Your corrugated containers can have nine lives if you staple and re-staple for use and re-use. Bostitch, in the interests of saving corrugated board has published a booklet, "How to Save Time and Money in 12 Important Shipping Room Operations."

Circle No. 85 on Reader Service Card

"In Dollars & Sense" is the title of a detailed Brochure offered by Roura Iron Works, Inc. on its self-dumping hoppers. It tells you how to get economical, safe and speedy material handling.

Circle No. 128 on Reader Service Card

Moto-truc's six basic models, quickly adaptable to any problem in the walkie field are covered in bulletin No. 51 of the Moto-Truc Co. You can get a copy by using the number below.

Circle No. 46 on Reader Service Card

Less waste floor space, easy inventory, and simple handling are a few of the advantages Pittsburgh Steel Products Co. claims for its Cargo-tainers. The company wants to show you how collapsible wire containers can benefit you.

Circle No. 3 on Reader Service Card

Yale hoists for practically every lifting job are described in detailed literature offered by Yale & Towne Mfg. Co. Any weight from 500 lb. to 40 tons can be lifted with this company's hoists.

Circle No. 24 on Reader Service Card

The Adjust-o-matic Rack of Borroughs Mfg. Division helps you to get more storage space per sq. ft., and is built to hold any size pallet, skid or box. Details are contained in literature you can get free.

Circle No. 38 on Reader Service Card

Want to know how you can extend your conveyor lines where it was never before possible? Berlin Chapman offers details on a conveyor which can be extended to truck platforms, shipping rooms, warehouses, loading ramps and practically anywhere necessary.

Circle No. 119 on Reader Service Card

More of industry's tough jobs go to YALE because...

EXCLUSIVE FEATURES EQUIP YALE ELECTRIC TRUCKS FOR



- **EXCLUSIVE YALE** Hypoid Gears have more tooth surface for longer wear, greater shock resistance. They're completely enclosed in one oil-sealed unit.
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- **EXCLUSIVE YALE** Lift Channels are specially rolled for extra strength. Ball bearing rollers reduce channel wear, cut battery drain due to friction.
- **EXCLUSIVE YALE** Inclined King Pins absorb road shock on steering shaft, make driving easier. Reduce operator fatigue.

BECAUSE YALE Electric Trucks pay their way *better* by working longer—they're the first choice of users who want the *most* for their truck dollars. To discover how a YALE Electric Truck investment can accumulate *extra* handling savings for you—fill out and mail this coupon today.

YALE is a registered trade mark of the Yale & Towne Mfg. Co.
The Yale & Towne Manufacturing Co., Philadelphia 15, Pa.

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Roosevelt Boulevard & Haldeman Ave., Philadelphia 15, Pa.

Please send me your free new detailed bulletin, THE YALE ELECTRIC TRUCK

Company _____

Name _____ Title _____

Street _____

City _____ State _____

In Canada write: The Yale & Towne Mfg. Co., St. Catharines, Ont.

YALE & TOWNE

YALE GAS TRUCKS • YALE WORKSAVERS • YALE HAND TRUCKS • YALE HAND AND ELECTRIC HOISTS

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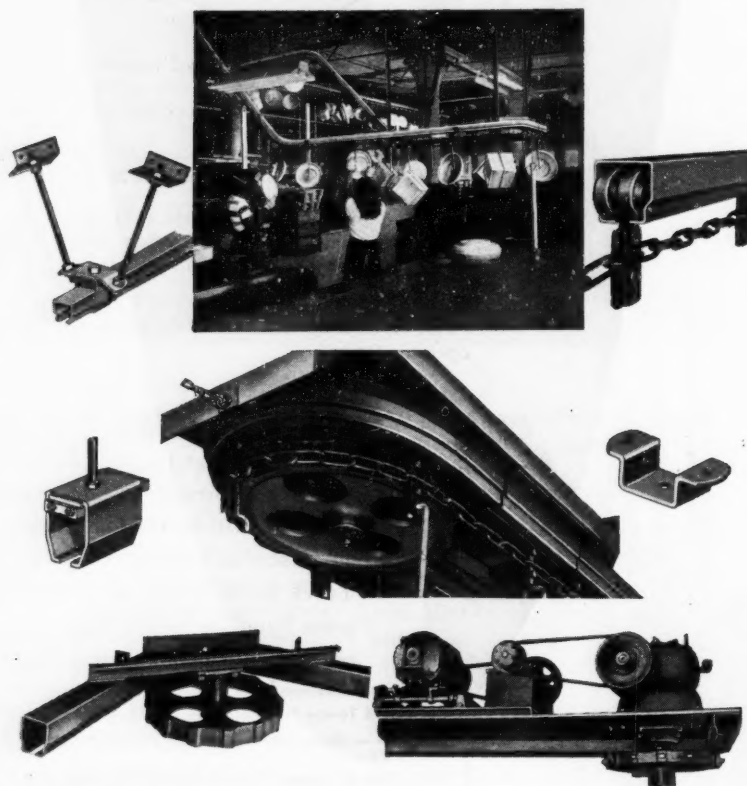
A Packaged Conveyor

you can erect yourself

Here is a complete overhead, power driven, monorail conveyor for light and medium loads—the MHS Junior Monoveyor.

You make your own layout to meet whatever manufacturing, transportation and storage requirements you have. Order the necessary components and erect it yourself. No lost time—no unnecessary expense.

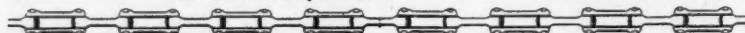
Write for Bulletin JM-1 for complete details on components and layout.



**Mechanical
Handling**
Systems, Inc.

4620 NANCY AVE. • DETROIT 12, MICH.

Offices in Principal Cities



Circle No. 42 on Reader Service Card for more information

Advantages of battery-operated industrial trucks are given in a bulletin published by Edison Storage Battery Division of Thomas A. Edison, Inc. Three of the many features cited are cleanliness, safety and quiet operation.

Circle No. 43 on Reader Service Card

Everyone can count on a Veeder-Root counter. Here's an instrument that is said to "count everything on earth". Veeder-Root Inc. has complete information to give to you.

Circle No. 13 on Reader Service Card

You can get positive overload protection with the Anchor-Waldron Torque-sensitive mechanical control. Operating range is 10 to 2000 inch lb. Catalogs on all products made by John Waldron Corp. are yours for the asking.

Circle No. 69 on Reader Service Card

Soap, spuds, steel or anything else you make can be successfully conveyed according to Standard Conveyor Co. A reference book "Conveyors by Standard" tells about many of the types available.

Circle No. 65 on Reader Service Card

Cases, cartons, boxes, cans and almost any product you want can be conveyed economically with the Ultimate Double-Flex Chain Conveyor of Island Equipment Corp. The company will tell you how its conveyor can save you money.

Circle No. 116 on Reader Service Card

Instant and positive protection for driven machines, motors and speed reducers is offered by Dodge Mfg. Corp. with its new Tri-Matic Overload Release. Special data is available.

Circle No. 10 on Reader Service Card

Exclusive features of the Yale electric truck are described in a bulletin offered by Yale & Towne Mfg. Co. The truck's hypoid gears, involute spline drive shaft, lift channels, and inclined king pins are some of the features you can learn about.

Circle No. 41 on Reader Service Card

A catalog containing information on portable bar racks is yours for the asking. Offering it is Palmer-Shile Co. All information for ordering the right rack for your use is given.

Circle No. 160 on Reader Service Card

The complete story of advantages of the C-F Lifter are contained in bulletin SL-25 of Cullen-Friestedt Co. Quick adjustments adapt the lifter to any width of sheet steel. Circle the number below on the reader's service card.

Circle No. 140 on Reader Service Card

Good tackle blocks protect your wire rope investment. Madesco Tackle Block Co. will send you complete information telling why you will profit from use of its sheaves and blocks.

Circle No. 146 on Reader Service Card

Ability to carry any kind of load is said to be an outstanding feature of Truscon Steel Co.'s steel box and skid platform units. Illustrated literature describes the complete line.

Circle No. 22 on Reader Service Card

Old time values in up-to-date handling equipment are described by Clark Equipment Co. in literature you can get. Material Handling News, Basic Facts Book, and a condensed catalog are all available for the asking.

Circle No. 37 on Reader Service Card

What's U. S. Rubber Co. doing for coal handling? You can learn how this company is enabling mine operators and coal handlers to increase output and decrease their operating costs.

Circle No. 29 on Reader Service Card

How to shorten packing time and reduce damage in transit will be explained to you by Acme Steel Co. if you use the number appearing below. The company will tell you about its steel strapping.

Circle No. 14 on Reader Service Card

Non-stop trips for dies from tool room to press are possible with the Raymond platform-type electric tiering truck. Bulletin 710 of Raymond Corp. gives all the details.

Circle No. 15 on Reader Service Card

A tire and wheel analysis plan of B. F. Goodrich Co. studies your equipment, floors and hauling surfaces as well as other factors, and then makes recommendations regarding tire and wheel types and sizes you need. You can get more info. on the plan.

Circle No. 28 on Reader Service Card



Quiet... Clean... Safe

Because they are quiet, clean and safe, battery industrial trucks can be used without restriction in virtually any department of the plant or warehouse including confined quarters as well as areas devoted to processing foods, pharmaceuticals and other products demanding utmost cleanliness. They can even be provided with spark-enclosed construction for operation in hazardous locations.

They use low-cost electric power for battery charging; and they use it with maximum economy, because they start instantly, yet consume no power during stops. With electric-motor drives and EDISON Nickel-Iron-Alkaline Storage Batteries, they have a minimum of wearing parts; are easy to maintain, are rarely out of service for repairs. With batteries exchanged at convenient intervals, they operate around the clock with the highest dependability and lowest overall operating costs.

EDISON batteries have these important features:

They are durable mechanically; grids, containers and other structural parts of the cells are of steel; the alka-

line electrolyte is a preservative of steel.

They can be charged rapidly; gassing cannot dislodge the active materials.

They withstand temperature extremes; are free from freezing hazard; are easily ventilated for rapid cooling.

They are foolproof electrically; are not injured by short-circuiting, reverse charging or similar accidents.

They can stand idle indefinitely without injury. Merely discharge, short-circuit, and store in a clean, dry place.

They are simple and easy to maintain.

As a result of these features, they are the longest-lived of all storage batteries. In fact, they have such long life that they effect important economies in depreciation charges. And they are so trouble-free that they cut maintenance charges too. Send for bulletin *Modern Material Handling* for further details of the advantages of electric-motor drives and EDISON batteries. Edison Storage Battery Division of Thomas A. Edison, Incorporated, West Orange, N. J. Thomas A. Edison of Canada, Limited, Montreal.

You can always rely on



EDISON

Nickel-Iron-Alkaline Storage Batteries

Circle No. 43 on Reader Service Card for more information

BETTER because they are BUILT to be better



You get more for your money with Rapistan Cold-Forged Industrial Casters because they are built to give longer, better service than any other caster of comparable price today.

HERE'S PROOF!

MAKE THESE COMPARISONS YOURSELF	RAPISTAN Cold-Forged Series 40	CASTER A	CASTER B	CASTER C	CASTER D
		<i>Letters represent leading makes of stamped steel casters.</i>			
Method of construction	Cold-Forged	Stamped	Stamped	Stamped	Stamped
Thickness of top plate	1/4"	3/16"	3/16"	3/16"	3/16"
Thickness of caster legs	3/16"	1/8"	1/8"	1/8"	1/8"
Number of raceways—rows of ball bearings	2	2	2	2	2
Smoothness of raceways	.0007"	.0023"	.0030"	.0016"	.0017"
		<i>Figures represent degrees of roughness measured to .0001"</i>			
Ball-bearing surface contacting top plate raceway	.120"	.005"	.030"	.030"	.005"
Ball-bearing surface contacting yoke raceway	.100"	.070"	.030"	.005"	.005"
Protection between wheel-hub and yoke leg	Case hardened, thrust washer	None	None	None	None
Shape of bolt hole for use with previous spacings	Slotted for flexibility	Round	Round	Round	Round

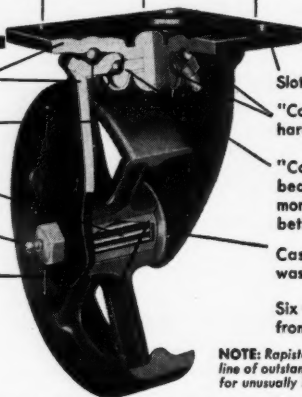
Extra-thick top plate and yoke legs

Two full rows of ball bearings

Hyatt-type wheel bearings

Zerk lube fittings

Hardened outer raceway for wheel bearings



Slotted bolt holes

"Coined" raceways... harder and smoother

"Contour Contact" of bearings on raceways... more surface contact for better load distribution

Case hardened thrust washer

Six wheel types... sizes from 3 1/2" to 8"

NOTE: Rapistan also makes a complete line of outstanding steel forged casters for unusually heavy work.

FOR YOU... Illustrated catalog with specifications on Cold-Forged casters and information on our complete line of casters and hand trucks. Write today.

Rapistan®

FASTEST GROWING NAME IN CASTERS

The RAPIDS-STANDARD CO., Inc., 761 Rapistan Bldg., Grand Rapids, Michigan

Circle No. 44 on Reader Service Card for more information

Fork trucks which are said to reduce material handling costs and operations are described in Bulletin No. 77, available from the Silent Hoist & Crane Co., manufacturers of these units.

Circle No. 154 on Reader Service Card

"How to Increase Tractor-Shovel Production, Decrease Tractor-Shovel Maintenance" is the name of the booklet offered by the Service Supply Corporation, makers of front end tractor shovels.

Circle No. 66 on Reader Service Card

The Rapids-Standard Co., Inc., has published an illustrated catalog with specifications on their Cold-Forged casters and information on their complete line of casters and hand trucks.

Circle No. 44 on Reader Service Card

The installation of pneumatic tubes to handle paper work may save you money. The Lamson Corporation will show you how it can be done in their booklet, "Wasted Steps".

Circle No. 64 on Reader Service Card

If you're having trouble with hard-to-handle materials, you'll want to look over the Food Machinery and Chemical Corporation's clamp trucks for all types of box handling. Bulletins are available.

Circle No. 129 on Reader Service Card

C & D Batteries, Inc., will send you their catalog on Slyver-Clad batteries which explains in detail the construction and performance features of these batteries.

Circle No. 52 on Reader Service Card

A fully hydraulic truck crane which is said to be able to spot loads within a fraction of an inch is described in literature made available by the Bucyrus-Erie Hydrocrane Division.

Circle No. 59 on Reader Service Card

If you want proof on how Angier Snake Tape seals cartons 3/4 faster, as well as making a stronger and cheaper closure, the Angier Corporation will send you literature describing this product.

Circle No. 86 on Reader Service Card

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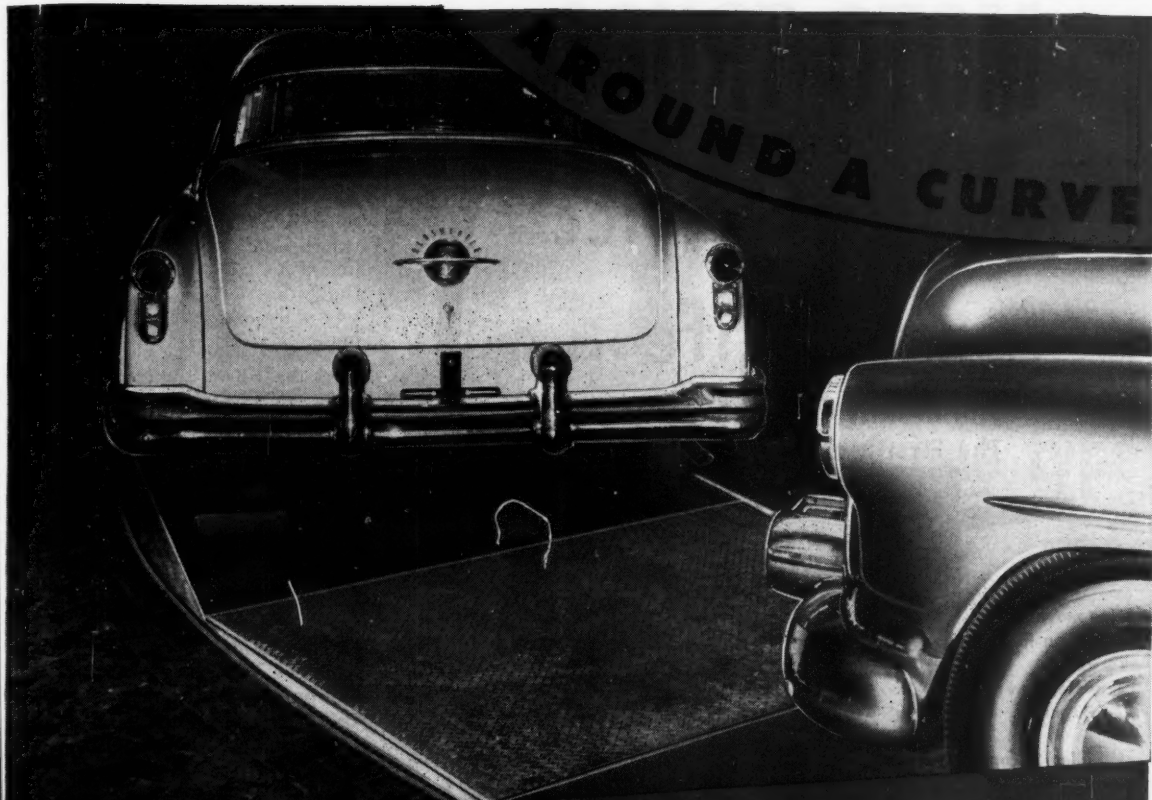
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Power Conveyors
Engineered to your requirements
WRITE FOR ILLUSTRATED CATALOG-50-B

ANCHOR STEEL AND CONVEYOR CO. 6906 KINGSLEY AVE.
DEARBORN, MICHIGAN.
Circle No. 45 on Reader Service Card for more information

• MARCH, 1952

MOTO-TRUCS

GIVE

Greater Service WITH Longer Life...

Still in active service after 15 years.
The First Moto-Truc Walkie (1936).

Has moved over
2 million lbs.

Traveled over
7,000 miles

Handles 2 Ton
loads daily



Cost:—a few
cents a day

Up to 10 hours
on one charge

Saves many
Man-hours

A "twist of the wrist" does it.

The matchless performance of this original experimental model of the first "Walkie" is unequalled in the history of materials handling. It has long since paid for itself in many ways. It is SYMBOLIC of Moto-Truc's RUGGED stability.



Exclusive Breaking System

Smallest Turning Radius

Powerful Rugged Motor

All Welded Construction

Dead-Man Controls

Easiest to Operate

Interchangeable Drive Units

Thousands of Moto-Truc Walkies are in daily use all over the country. They operate on rigid, daily schedules with no loss of their original efficiency.

MOTO-TRUC'S 6 BASIC MODELS ARE QUICKLY ADAPTABLE TO ANY PROBLEM IN THE WALKIE FIELD.

DON'T BE SATISFIED WITH LESS THAN THE BEST.

THE MOTO-TRUC CO.

SEND FOR
Bul. No. 51

1953 E. 59th STREET • CLEVELAND 3, OHIO
PALLET, PLATFORM AND HI-LIFT TRUCKS
LARGEST EXCLUSIVE MANUFACTURER OF "WALKIES"



Circle No. 46 on Reader Service Card for more information

Get the facts on Bowser meters from Bowser, Inc., which says these meters can accurately measure and safely handle more than 662 different liquids in numerous operations.

Circle No. 75 on Reader Service Card

The Mercury Manufacturing Co. is releasing a 44-page catalog illustrating and describing its complete line of industrial vehicles, including the fork truck-trackless train system of loading, hauling and unloading.

Circle No. 51 on Reader Service Card

Casters which are available in any size, style, capacity—swivel or rigid types, in sets or in thousands are described by Albion Industries, Inc., in their illustrated caster catalog.

Circle No. 145 on Reader Service Card

Complete information is available from the Minnesota Mining & Mfg. Co. on its "Scotch" pressure-sensitive tape which comes in eight colors for lane marking and in many widths.

Circle No. 83 on Reader Service Card

The General Electric Company's Bulletin GEA-5292A will tell you how to get more working time from your trucks with G-E metallic rectifier chargers, which can be placed in working areas.

Circle No. 58 on Reader Service Card

A steel hand hoist with compact, adjustable suspension and trolley to fit various width I-beams, plus other features, is described in Bulletin DH-269 by the American Chain & Cable Co., Wright Hoist Div.

Circle No. 48 on Reader Service Card

"Industrial Handling" is The Frank G. Hough Co. magazine of bulk handling ideas. Literature on all seven sizes of this company's tractor-shovels is also available.

Circle No. 49 on Reader Service Card

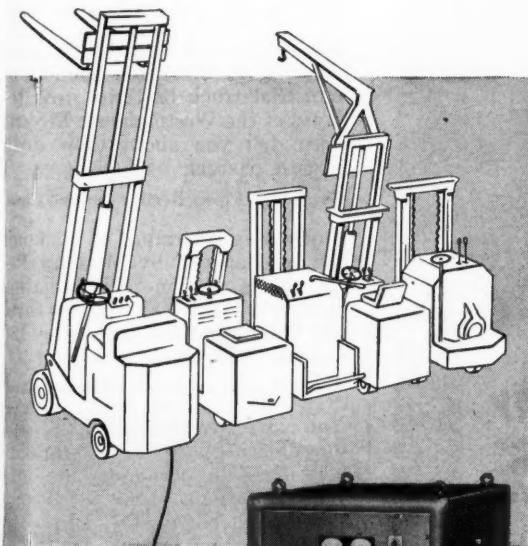
You can be sure of a level load on trucks moving over irregular floors if you're using the S-H double action spring casters made by the Faultless Caster Corporation. Descriptive literature is available.

Circle No. 1 on Reader Service Card



**"Now we use just one type
of battery charger—**

RECTOX!"



You don't need a special charger for each of the many models of industrial truck batteries in use today. Westinghouse Rectox Dual-Purpose Charger is designed to service most of these batteries. One unit charges either Lead-acid or Nickel-alkaline-type batteries . . . covers the wide range 200 to 500-ampere hours; 15 to 24 cells to change from one type to the other; just flip a switch. What's more, you get these features also:

- *No taps to change—charging cycle is completely automatic.
- *No energy wasting resistor. No moving parts.
- *Current selection by simple twist of dial.

MORE DATA? Ask your Westinghouse representative for a copy of DB-19-040 or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.
J-21621

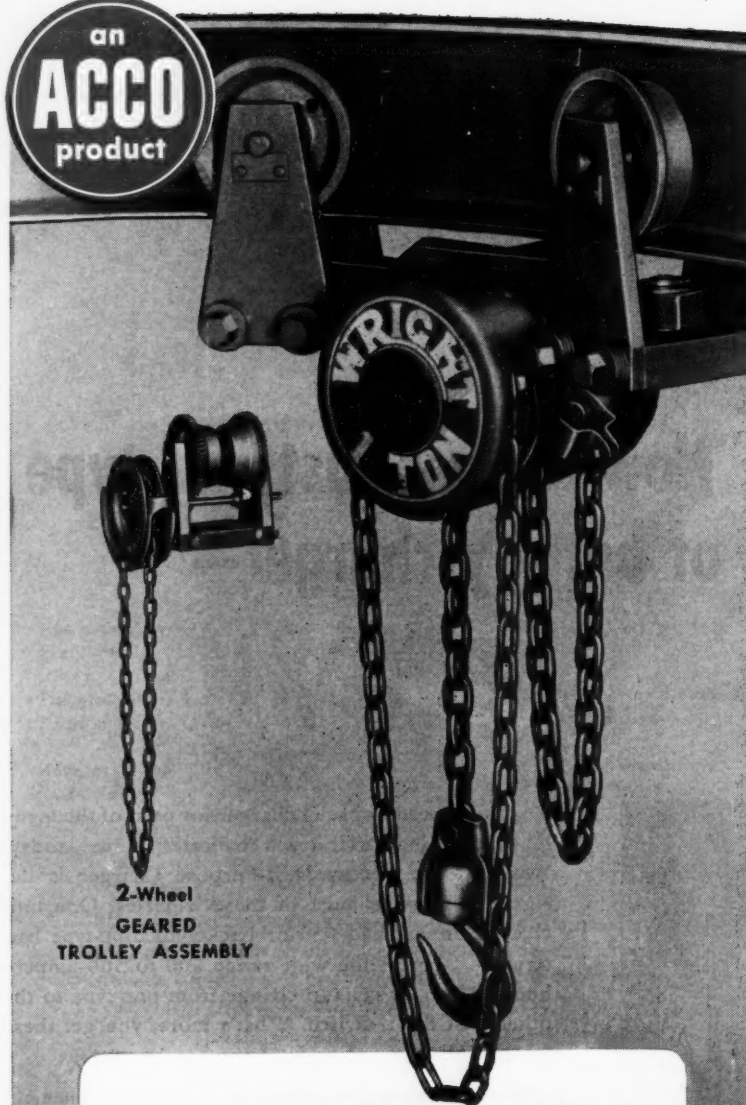


YOU CAN BE SURE.. IF IT'S
Westinghouse

Rectox

INDUSTRIAL TRUCK CHARGERS

Circle No. 47 on Reader Service Card for more information



2-Wheel
GEARED
TROLLEY ASSEMBLY

Army Type **WRIGHT SAFEWAY**

● A steel hand hoist with compact, adjustable suspension and trolley to fit various width I-beams. Designed for low overhead. Easily converted to 2-wheel geared trolley unit.

Longer-life features include: steel in all load-supporting parts; load sheaves with five formed pockets; automatic load chain lubricator; alloy steel load chain; swiveling drop-forged load hook; alloy steel, machine-cut gears; fully enclosed, self-oiling gear case.

See your WRIGHT distributor or write for Bulletin **DH-269**.

ACCO



WRIGHT HOIST DIVISION
AMERICAN CHAIN & CABLE

York, Pa., Chicago, Denver, Detroit, Los Angeles, New York,
Philadelphia, Pittsburgh, Portland, San Francisco,
Bridgeport, Conn.

WRIGHT

**Hoists
Trolleys
Cranes**

Circle No. 48 on Reader Service Card for more information

Versatile units, Hallowell "700" steel platform trucks in light and medium-duty sizes can be converted to tilt-type trucks. Standard Pressed Steel Company will send you descriptive bulletin 718-3.

Circle No. 62 on Reader Service Card

If you want to find out how you can gain increased loading capacity without increasing costs, Magline, Inc., will send you Bulletin DB-204 which describes its magnesium dock boards.

Circle No. 17 on Reader Service Card

Power conveyors will be engineered to your requirements by the Anchor Steel and Conveyor Co., whether they are around curves, up inclines or in straight lines. Get their illustrated catalog 50-B.

Circle No. 45 on Reader Service Card

One man can safely and easily load heavy drums and barrels with an American drum and barrel cradle. A bulletin is available from the manufacturer, The American Pulley Company.

Circle No. 70 on Reader Service Card

You don't need a special charger for each of the many models of industrial truck batteries used today. Let the Westinghouse Electric Corp. tell you about their dual-purpose charger.

Circle No. 47 on Reader Service Card

A new freight terminal at St. Louis has been opened by Missouri Pacific Lines. Get more information on this terminal, which covers three city blocks and accommodates 180 cars on 12 enclosed tracks.

Circle No. 27 on Reader Service Card

You can prove to yourself the need for efficient material handling in your plant by obtaining the "Material Handling Analysis Guide" made available by the Automatic Transportation Company.

Circle No. 2 on Reader Service Card

Mechanical Handling Systems, Inc., makes a complete, overhead, power driven monorail conveyor which you can erect yourself. Bulletin JM-1 gives complete details on component and layout.

Circle No. 42 on Reader Service Card

A catalog describing its entire line of wheels has been made available by the Aerol Co., Inc., which says the features of its line reduce maintenance and replacement costs to the minimum.

Circle No. 12 on Reader Service Card



Handling broken glass (cullet) can be a tough job—but it's profitable play with a "PAYLOADER"

a glutton for cullet... or any bulk materials

"PAYLOADER" tractor-shovels have made outstanding records in thousands of plants by reducing the time, labor and cost of handling all kinds of bulk materials. They scoop-up, carry, dump and stockpile materials . . . lift, push . . . spot and unload box cars . . . handle coal and ashes and do many other cost-cutting chores. They take over slow, laborious jobs and do them faster, easier and cheaper—releasing manpower for more productive work.

Every "PAYLOADER" is a complete Hough-built tractor-shovel *designed specifically for tractor shovel work*. Multiple reverse speeds, large pneumatic tires and other features insure fast, low-cost performance over floors or unpaved ground, in congested areas, up or down ramps. The "PAYLOADER" is sold by a world-wide Distributor organization with complete service facilities. The Frank G. Hough Co., 731 Sunnyside Ave., Libertyville, Illinois.

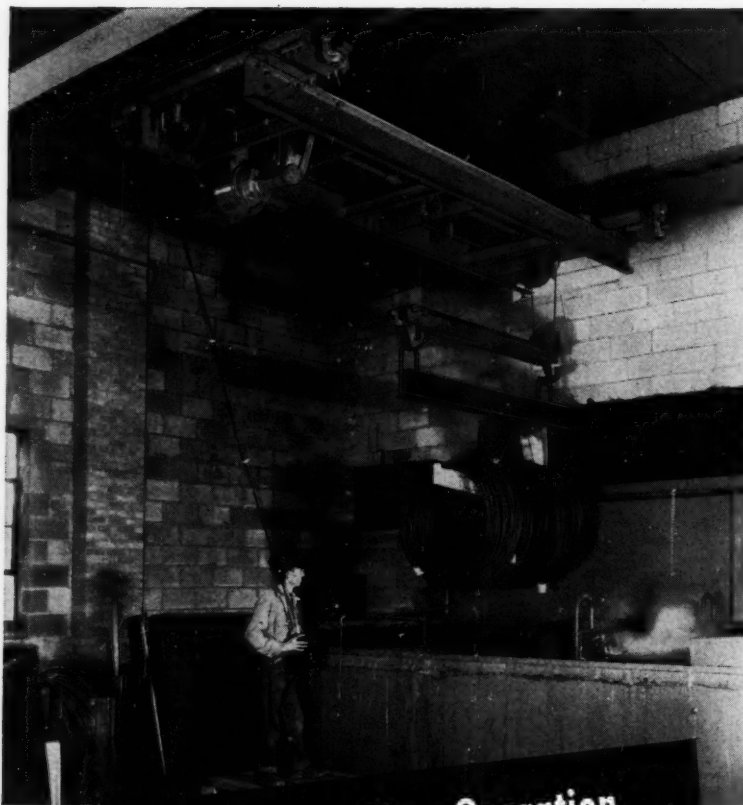
HELPS for your handling problems are found in **INDUSTRIAL HANDLING**, the Hough magazine of bulk-handling ideas. Literature on all seven sizes of "PAYLOADERS" from 12 cu. ft. to 1½ cu. yd. are also available, without obligation.



PAYLOADER
THE FRANK G. HOUGH CO. • Since 1920



Circle No. 49 on Reader Service Card for more information



Continuous One Man Operation . .

with **AMERICAN MONORAIL**

Here's an operation that must be on the go, all the time and fast, and yet, one man plus an American MonoRail Crane keeps the line flowing smoothly and fast. Fast operating, constant service, American MonoRail Cranes are ruggedly built to handle loads up to 10 tons at operating speeds of 500 feet per minute. Articulated trolleys assure perfect alignment of trucks for smooth crane travel.

Let an American MonoRail engineer explain all the advantages of these constant service cranes.

THE AMERICAN MONORAIL COMPANY

13129 ATHENS AVENUE

CLEVELAND 7, OHIO

Circle No. 50 on Reader Service Card for more information

The Gould Plus-Performance Plan consists of manuals, articles, specifications, bulletins, record cards, charts and graphs covering every phase of battery care. A booklet describing the plan is available from Gould-National Batteries, Inc.

Circle No. 11 on Reader Service Card

If you want to utilize unpaved outside space for storage, the Tracto-Lift Company's fork truck may do the job for you, since it can work on rough, unpaved ground. Specifications are available.

Circle No. 18 on Reader Service Card

Hardwood tote boxes that have been made waterproof, greaseproof and acid resistant are manufactured by the Cesco Container Co., which will send you further information.

Circle No. 73 on Reader Service Card

If you handle flowable materials Hapman Conveyors, Inc., would like to show you how you can make substantial savings with their tubular conveyors. Get their bulletin.

Circle No. 131 on Reader Service Card

Here's a complete, portable hoist—all you do is hang it up, plug it in and use it. Capacities from 250 to 4000 pounds. Bulletin No. 391 from Manning, Maxwell & Moore, Inc., will tell you about it.

Circle No. 149 on Reader Service Card

The Elwell-Parker Electric Company describes its fork truck as a giant with 19 hands, since it can be put to as many uses by using a different attachment. A bulletin on these attachments is available.

Circle No. 5 on Reader Service Card

Details on how you can cut your bag closing costs with the Fischbein portable bag closer can be obtained from the Dave Fischbein Company.

Circle No. 95 on Reader Service Card

(Turn to page 154)

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FLOW

Why **1** when you can transport **4**

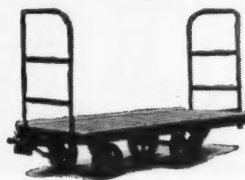
WITH THE MERCURY FORK TRUCK-TRACKLESS TRAIN SYSTEM

If your fork trucks travel over 150 feet (maximum)—you can save time ... money ... man power with the fork truck—"trackless train system."

In the system *trailers* do the transporting job—the fork truck loads the trailers ... hauls the train ... unloads and stacks at destination. And if your volume is large and distances great an electric tractor may be the best bet for the hauling job.

Let a MERCURY sales representative actually demonstrate the increase in efficiency the addition of trailers will make in your handling system. There is no obligation. Use the convenient coupon.

Mercury "Jeep" Fork Truck loads, hauls and unloads A-310 Trailers at grocery warehouse. ➡



Model A-310 Trailer (4000 lb. capacity) with the "Safety-Self-Coupler" for "Trackless-Train-System" operation.

➡ Mercury "Jeep" Fork Truck loads A-310 Trailer train to be hauled by a Mercury "TUG" Electric Tractor.

MERCURY

FORK TRUCKS · TRACTORS · TRAILERS



MERCURY MANUFACTURING COMPANY
4154 So. Halsted St., Chicago 9, Illinois

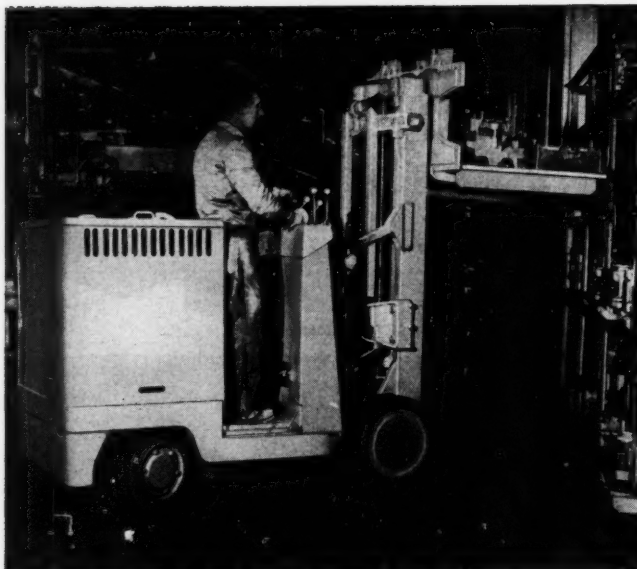
- ☐ Have a representative call.
- ☐ Send copy of new 44 page catalog illustrating and describing complete MERCURY line.

Name _____
Company _____
Address _____
City _____ Zone _____ State _____

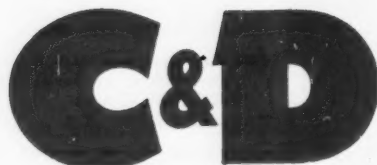
MERCURY MANUFACTURING CO., 4154 So. Halsted St., Chicago 9, Illinois

Circle No. 51 on Reader Service Card for more information

FLOW • MARCH, 1952



C&D Slyver-Clad
...the best battery for your lift trucks



BATTERIES, INC.

OF CONSHOHOCKEN, PA.
(In the Philadelphia Area)

SALES AND SERVICE

Boston, New York, Philadelphia, Syracuse, Buffalo, Pittsburgh, Washington, Atlanta, Jacksonville, New Orleans, Cleveland, Detroit, Chicago, St. Louis, Minneapolis, Dallas, Denver, San Francisco, Los Angeles, Portland, Seattle

Circle No. 52 on Reader Service Card for more information

STARTS STRONG!

Right from the very first minute of the shift, a C&D Slyver-Clad battery delivers extra power. That's because *this* is the battery with 20% greater capacity than ordinary batteries. Plates are heavier, thicker, and 14% longer! Result: more power-producing material to help your trucks get *more work done each day!*

WORKS STRONGER!

The extra-long plates in a C&D Slyver-Clad battery enable operators to get *maximum* performance from their trucks—to lift heavy loads time and again, to take ramps and inclines easily, to travel swiftly whenever necessary. Yet this super battery is contained in a steel-tray the same size as that of ordinary batteries!

ENDS STRONGEST!

With Slyver-Clad power there's no let-down before the end of the shift. Longer plates deliver maximum power for a *full*, hard working day. Secret of getting more battery into a given space lies in C&D's exclusive Five-Fold Slyver-Clad method of plate insulation and retention. Efficient retention holds active material in place so its full power-potential can be utilized. During its entire life this same principle accounts for Slyver-Clad's 35% longer work-life!

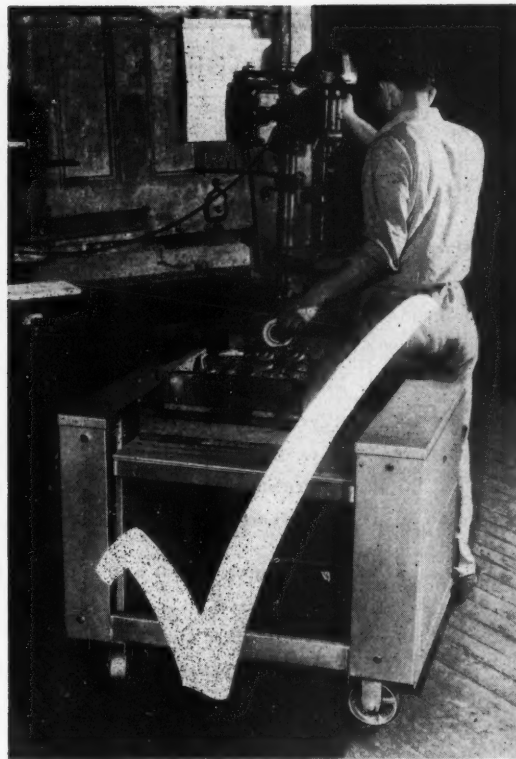
FREE—Send for C&D's catalog on Slyver-Clad Batteries which explains in detail the construction and performance features of these hard-working batteries. Write for your copy today!



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WRONG: This is costly, invites hernias.



RIGHT: Positioners lift faster, easier.

**What Methods Does Your Plant Use to Position Materials?
If They're Not Right – They Can Be Pretty Expensive . . .**

What Equipment for Positioning?

The positioning phase of material handling—the handling of materials one at a time at the machine or within production areas at the machine, assembly, inspection and maintenance—is an often-neglected operation which could actually mean the difference between profit and loss for a company.

Many plants which have complete, up-to-date material handling equipment for the mass movement of materials continue to employ outmoded manual methods of handling individual pieces at production centers. The resulting loss of time and money can often be avoided, since much of this manual handling can be eliminated or simplified.

Not only can the use of positioning equipment result in substantial savings of time and money by minimizing the amount of manual handling, but it will

help reduce the number of back injuries and hernias suffered by workers as a result of heavy lifting.

Positioning, then, undoubtedly warrants a closer study by industrial executives. It represents a large proportion of the handling of materials from the time they are received in the raw state until they go out of the shipping door as finished products.

Types of Positioning Equipment

Here are some of the types of equipment commonly used for positioning; but remember, there is no sharp, defining line between what is and what isn't positioning equipment. For instance, material handling equipment which was designed for such opera-

Turn the Page Please ►

Spot Poor Positioning Methods With an Operation Chart Like This

KEY:

A—Transporting or Tiering

B—Positioning

C—Production

Operation No. A B C			Description of Operation	Equipment Used
1	..	..	Unload sheets received in 2000-lb. bundles. Transport bundles from freight car to storage and tier.	Fork Truck
2	..	..	Untier and transport bundles from storage to shear in production department. Place on table in front of shear.	Fork Truck
..	3	..	Position sheets one at a time to feed line of shear.	MANUAL
..	..	4	Cut into smaller sheets.	Shear
..	5	..	Place cut sheets, piece by piece, on pallets.	MANUAL
6	..	..	Transport the pallet load of cut sheets and place in front of punch press.	Hand or Power Pallet Truck
..	7	..	Raise sheets one at a time to feed line of press.	MANUAL
..	..	8	Blank sheets.	Punch Press #1
..	9	..	Place blanked sheets on pallet.	MANUAL
10	..	..	Transport pallet load of blanked sheets to next punch press operation.	Hand or Power Pallet Truck
..	11	..	Raise sheets one at a time to feed line of press.	MANUAL
..	..	12	Punch sheets.	Punch Press #2
..	13	..	Place punched sheets on pallet.	MANUAL
14	..	..	Transport pallet load of punched sheets to press brake.	Hand or Power Pallet Truck
..	15	..	Raise sheets one at a time to feed line of press.	MANUAL
..	..	16	Form Sheets.	Press Brake
..	17	..	Place formed sheets on pallet.	MANUAL
18	..	..	Transport to assembly department.	Hand or Power Pallet Truck
..	19	..	Position formed sheet for assembly.	MANUAL
..	..	20	Assemble.	MANUAL
6	9	5	Total Operations.	

tions as transporting, loading and stacking is often used for positioning.

However, certain types of equipment have been manufactured expressly for the positioning phase of material handling. In fact, some manufacturers of material handling equipment have become extremely conscious of the increasing importance of this phase, and have tended to specialize in this particular type of equipment.

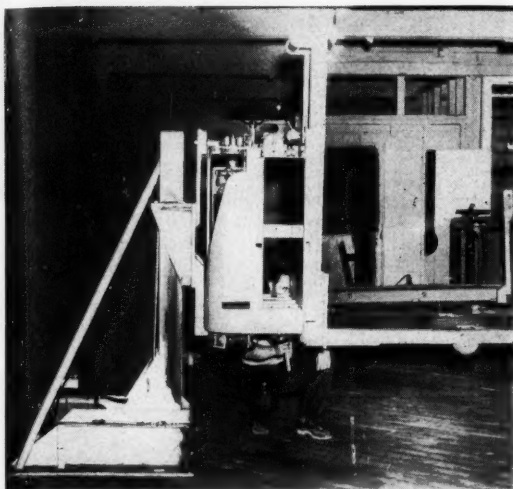
Thus, the types of positioning equipment to be discussed will be divided into two groups: 1) Specific Types, designed primarily for positioning, but which may also be used for other handling purposes, such as transporting or storing and 2) General Types, designed for such operations as transporting, lifting, tiering or loading, but which may be used for positioning.

Specific Types

Elevating Tables: Elevating tables are extremely versatile pieces of equipment for numerous material positioning applications, such as machining operations, assembly, maintenance, and the installation or removal of heavy machine parts. The table top can be readily adjusted to bring materials to a convenient position and height, and wheels or casters provide easy mobility of the unit.

Some tables have fixed tops, others can be revolved. The force to raise or lower the table top is usually either hydraulic or manual, and capacities ordinarily do not exceed 2000 lbs. Elevating tables are often used to handle sheets and dies, provided the loads are

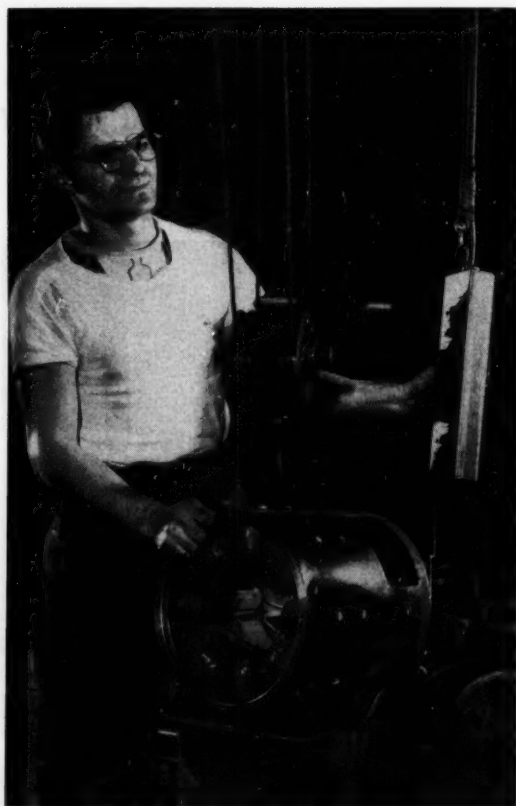
**More Photos on the Next Three Pages,
Text Continues on Page 92**



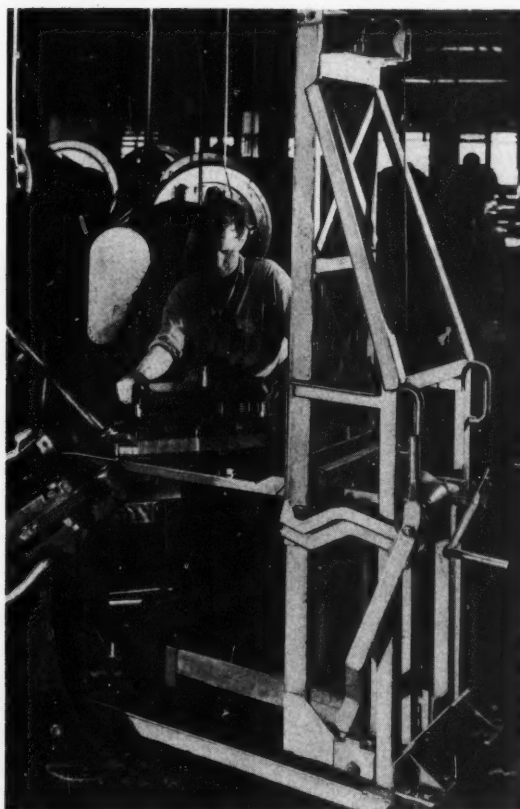
HEAVY ASSEMBLIES, like this industrial tractor unit, can be elevated during assembly operations with a heavy duty, power-driven positioner similar to the type shown.



LARGE PLATES can be moved to any position at a fixed height with ball transfers, which may either be mounted in steel tables or threaded to the ends of pipes bolted to the floor.



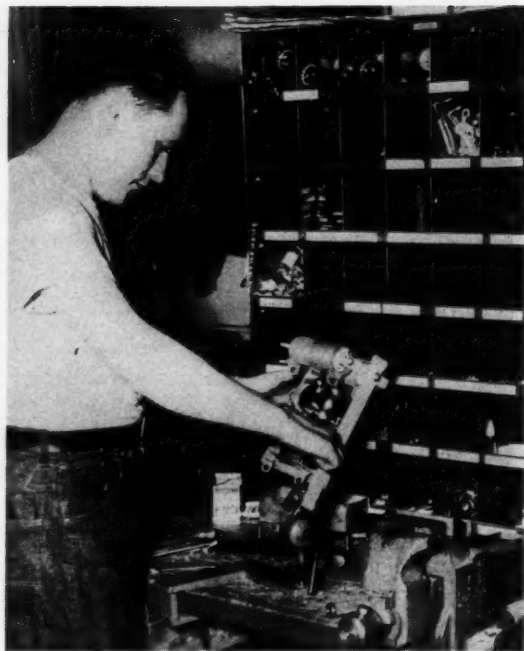
ASSEMBLY OR MAINTENANCE operations which involve heavy parts and tools can be greatly simplified if a crane-suspended hoist is available for lifting and positioning.



PORTABLE ELEVATORS can be adapted to a number of positioning operations, such as die handling at presses, in addition to their basic function of lifting combined with portability.

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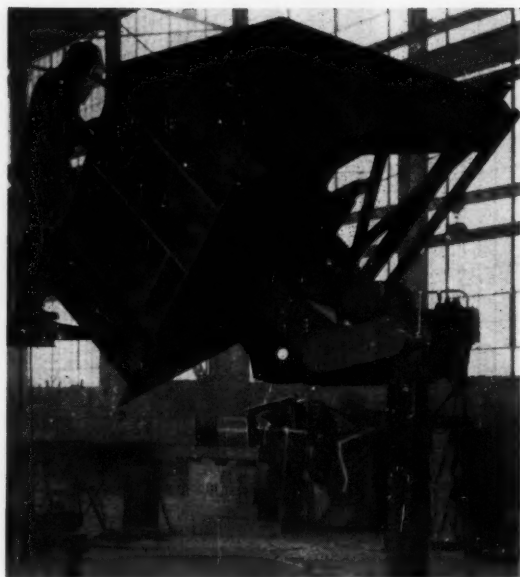


SMALL PARTS used in assembly operations can be handled more easily if they are mounted on a bench-type positioner, such as this specially-designed swiveling type.

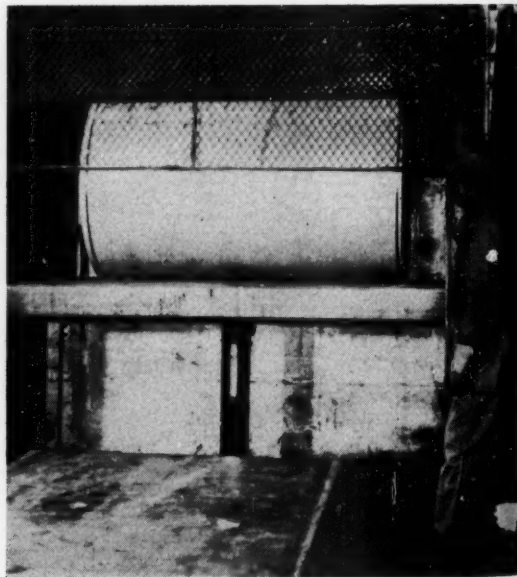


CONSTANT WORKING LEVEL is maintained with these automatic positioners. Cut-away views show how platform automatically adjusts when pieces are removed or loaded.

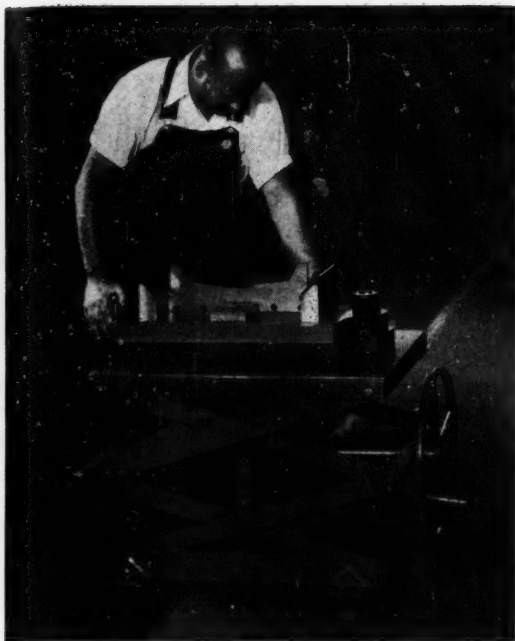
What Kind of



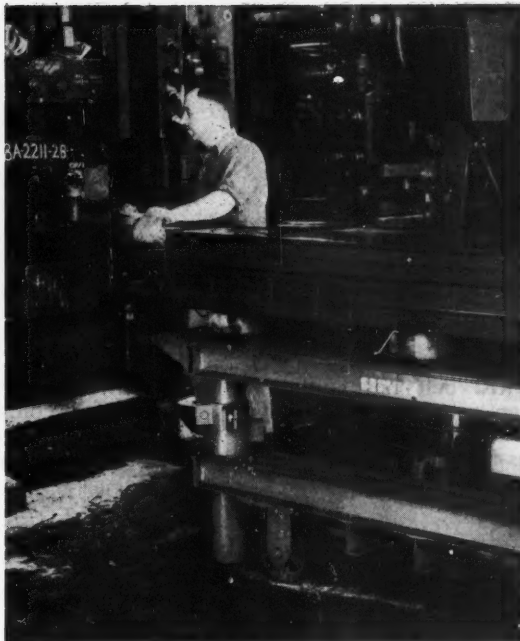
UNWIELDY WELDMENTS like this can be tilted or revolved to a position which is most convenient for the welder by using a large, heavy-duty welding positioner.



STATIONARY ELEVATORS or lifts may be used to raise large rolls of paper, as shown, or may be installed at presses or other machinery to lift sheets to working levels.

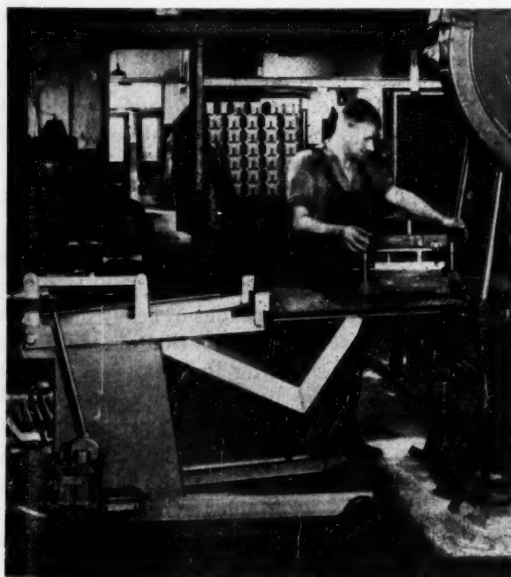


ELEVATING TABLES are versatile units which can be used for a number of positioning operations, as well as for transporting. The table top of this type is raised or lowered manually.

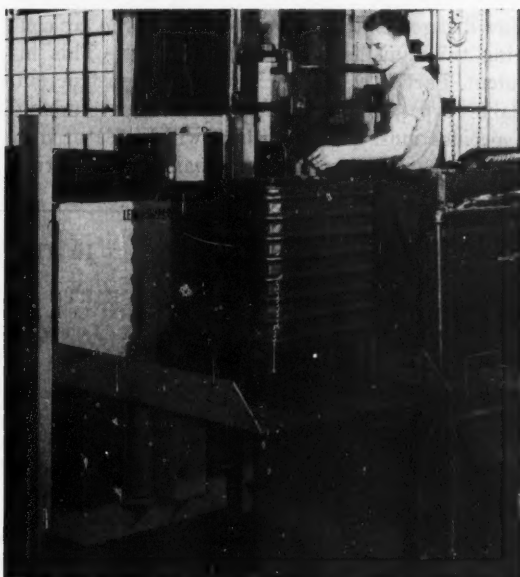


STACKED SHEETS are easily brought to the feed line of a press if they are positioned with a sheet feeding table. The table is raised to keep the top sheet at the required feeding level.

Positioning Equipment . . . continued

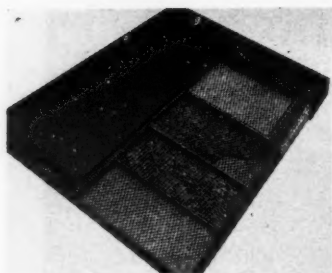


HEAVY FIXTURES and other pieces of machinery which must be lifted or lowered into position can be handled with this portable lift truck, which has a lifting range of about 4 ft.

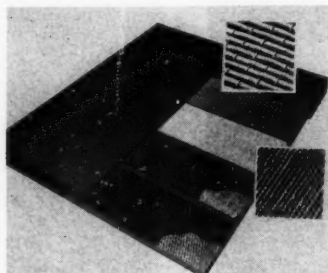


NO BENDING for pieces at the bottom of the skid box placed on this hydraulic lifter. The raising and lowering pedals may be placed conveniently close to the operator.

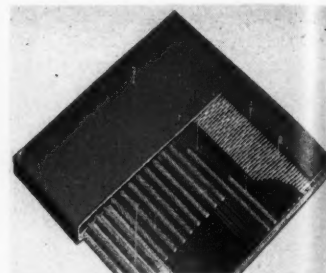
Here Are the Three Basic Types of Rubber Belting



FABRIC belt has carcass of woven cotton, nylon or rayon fabric. For excessive heat, glass fabric may be used.



CORD belt, with carcass of individual cords to act as shock absorbers, is often used when belt receives severe impact.



STEEL CABLE belt is normally used when operating tensions are extremely high. Fabric plies supply necessary rigidity.

Rubber Conveyor Belting: Part I

This survey report is designed for those readers who are now using rubber conveyor belting or who are considering this type for future installations. This installment, Part I, covers such topics as construction, available types, and requirements for determining belt specifications. Part II, which will be featured in the April issue, will cover care and maintenance of rubber belting.

Construction Details Of Rubber Belting

Before proceeding further, it must be remembered that a rubber belt is not made entirely of rubber. In general, rubber belting consists of two main components: the reinforcing member (or carcass) and the cover. The cover, both top and back, is rubber. Tough as it is, the rubber itself is not intended to supply any appreciable amount of structural strength—its primary purpose is to protect the reinforcing member.

The reinforcing member is actu-

ally the heart of the belt. It supports the load, pulls it, and furnishes the structural strength. Since the carcass is generally of fabric, cord or steel cables, it is imperative that it be well protected from abrasion, dampness and other harmful exposures or hazards. Rubber is used to impregnate the fabric plies and insulate the cords or steel cables.

Here are some of the main features of rubber belts:

1. **Long Life.** Some rubber belts have handled close to 100 million tons of heavy ores. There are belts that are still running after 10 or 15 years of continuous service. However, the length of service depends largely on how a belt is treated during its operating days.
2. **Molded Gripping Surface.** Specially-designed rough surfaces can be engineered into rubber belts to maintain load up steep inclines. Inclines of 25% and more are easily negotiated with rough-surfaced

In This Survey . . .

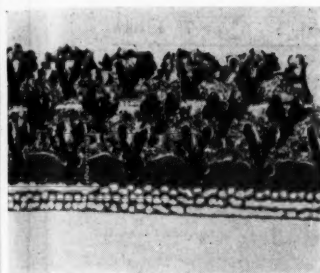
PART I

Construction Details
Types of Belting
Selecting the Right Type
How to Determine Specifications
An Easy-to-Follow Example

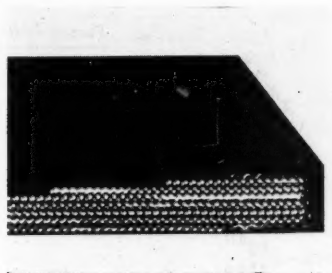
PART II

Care and Maintenance
Splices and Fasteners
Crooked-Running Belts
Causes of Belt Wear
Damage-Preventing Devices

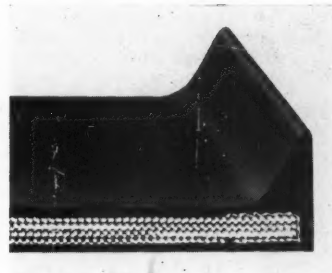
. . . And Here Are a Few of the Special Types



GRIPPING SURFACE with irregularly-shaped tread may be molded into the cover to hold loads up or down steep inclines.



STEPPING PLYS of fabric means additional rubber to handle loads which cause severe wear in middle of belt.



FLANGED SIDES on this belt will confine very moist or semi-liquid materials, preventing seepage over edges of the belt.

—Types, Constructions, Selection

rubber belting such as shown above.

3. **Resistance to External Factors.** Rubber belting is (or can be designed to resist severe abrasion, impact, heat, acid, etc. Naturally, the type of belting used depends on the kind of material handled.
4. **Non-Toxic Surface.** When handling foods or other products which must be kept sanitary, rubber belts provide non-toxic surfaces.
5. **Ease of Cleaning.** Another sanitary factor, rubber belting can be easily cleaned, and odors are not carried over from one load onto the next.

What Types Are There?

The three basic types of rubber belting are 1) those with a fabric carcass, 2) with cord carcass and 3) with carcass of steel cables. Each type has individual structural characteristics and is designed to meet particular needs.

1. Belting With Fabric Carcass:

- a. Rubber may be of different types, either natural or synthetic. The covers can be designed according to abrasion, impact, tear, oil, acids, heat, etc.

- b. Fabric may be of cotton, nylon, rayon or a combination of more than one of these. For excessive heat, glass fabric is used.

2. Belting With Cord Carcass:

- a. Rubber is similar to belting with fabric carcass.
- b. Cord can be of cotton, nylon, rayon or a combination of more than one of these. Glass fabric is not used with this type.

3. Belting With Carcass of Steel Cables:

- a. This type of belting is normally used when high tension is a factor, and usually only the highest quality rubber is used to adequately protect the expensive carcass.
- b. Steel cables are laid in the rubber in a longitudinal direction.

Of course, not all belting is of exactly the same construction. In some, the fabric plies of the carcass are stepped, thus making the cover heavier in the center of the belt. In others, the cover itself is built up in the center—and some may combine the stepped plies with the built-up cover. Such belting is used where severe wear occurs in the middle of the belt, as in the handling of coke, abrasives, slag, limestone, etc.

Turn the Page Please ▶

Table 1 – Weight of Moving Parts (Value “G”)

Belt Width In.	Portable Underground Coal or Grain Conveyors	Light Duty Conveyors 4" Idlers	Heavy Duty Type with 5", 6" or 7" Idlers	
			Belt Estimated to Be Relatively Light with 4, 5 or 6 Plies	Belt Estimated to Be Relatively Heavy with 7, 8, 9 or 10 Plies or Steel Cord
14	14	16	..	..
16	15	18	..	..
18	16	20	..	..
20	17	22	..	..
24	20	26	30	32
30	24	31	38	45
36	28	37	47	58
42	32	43	55	71
48		50	64	84
54			72	97
60			81	110
72			97	135

Table 2 – Drive Factor “K”

The following constants multiplied by the effective tension (T_2) equal slack side tension (T_1)					
Angle of Belt Wrap at Drive	Type of Drive	Screw Takeup		Gravity Weighted or Flexible Takeup	
		Bare Pulley	Lagged Pulley	Bare Pulley	Lagged Pulley
180°	Plain	1.6	1.0	.84	.5
190	Snubbed	1.5	.9	.77	.45
200	"	1.4	.8	.72	.42
210	"	1.3	.7	.67	.38
220	"	1.2	.6	.62	.35
230	"	1.2	.6	.58	.32
240	"	1.0	.5	.54	.30
360	Tandem	.8	.4	.26	.125
380	"	Not Recommended	Not Recommended	.23	.113
400	"	"	"	.21	.095
420	"	"	"	.19	.084
440	"	"	"	.17	.074
460	"	"	"	.15	.064
480	"	"	"	.14	.056

Note: 210° arc of contact on snubbed head pulley drives and 420° on tandem or dual motor drives are most frequently used.

Table 3 - Minimum Pulley Diameters (Inches)

No. of Plies	28 oz.			32 oz.			36, 42, or 48 oz.		
	Drive, Head, or Tripper Pulley	Tail, Take-Up, or High Tension Snub	Bend Pulley or Low Tension Snub	Drive, Head, or Tripper Pulley	Tail, Take-Up, or High Tension Snub	Bend Pulley or Low Tension Snub	Drive, Head, or Tripper Pulley	Tail, Take-Up or High Tension Snub	Bend Pulley or Low Tension Snub
3	18	12	12	18	18	12	30	24	18
4	24	18	12	24	24	18	30	24	18
5	24	24	18	30	24	18	36	30	24
6	30	24	18	36	30	24	42	36	24
7	36	30	24	42	36	24	48	36	30
8	42	30	24	48	36	30	54	42	36
9	54	42	30	60	48	36	60	48	36
10	54	42	30	60	48	36	60	54	42

Table 4 - Permissible Working Stresses

Belt Duck	Permissible Stress	Lb./in./ply
	Vulcanized Splices	Metal Fasteners
28 oz.	35	25
32 oz.	40	30
36 oz.	45	35
42 oz.	53	40
48 oz.	60	45

Other special belts have flanged sides to confine very moist or semi-liquid materials. Still another kind has an extra thick cover molded in the form of steps or lands for use with very wet materials. With this belt, water is guided to the sides of the belt and will not collect at the bottom of the belt trough.

What Type To Use?

Choosing the right belt for a particular installation is not merely a matter of specifying a certain length and width. First of all, the belt carcass should be of sufficient tensile strength to withstand the maximum operating tension. That means taking into consideration the weight of the material carried, rate of loading, belt speed, distance material is carried, lift or drop between loading and discharging points, and the type of drive used.

Secondly, the carcass should be able to properly support the imposed load between idlers. If a belt is too light or flexible, the load will sag between idlers and increase the horsepower necessary to drive the belt. Furthermore, the erratic flow may cause material to spill. If the belt is subjected to the severe impact of

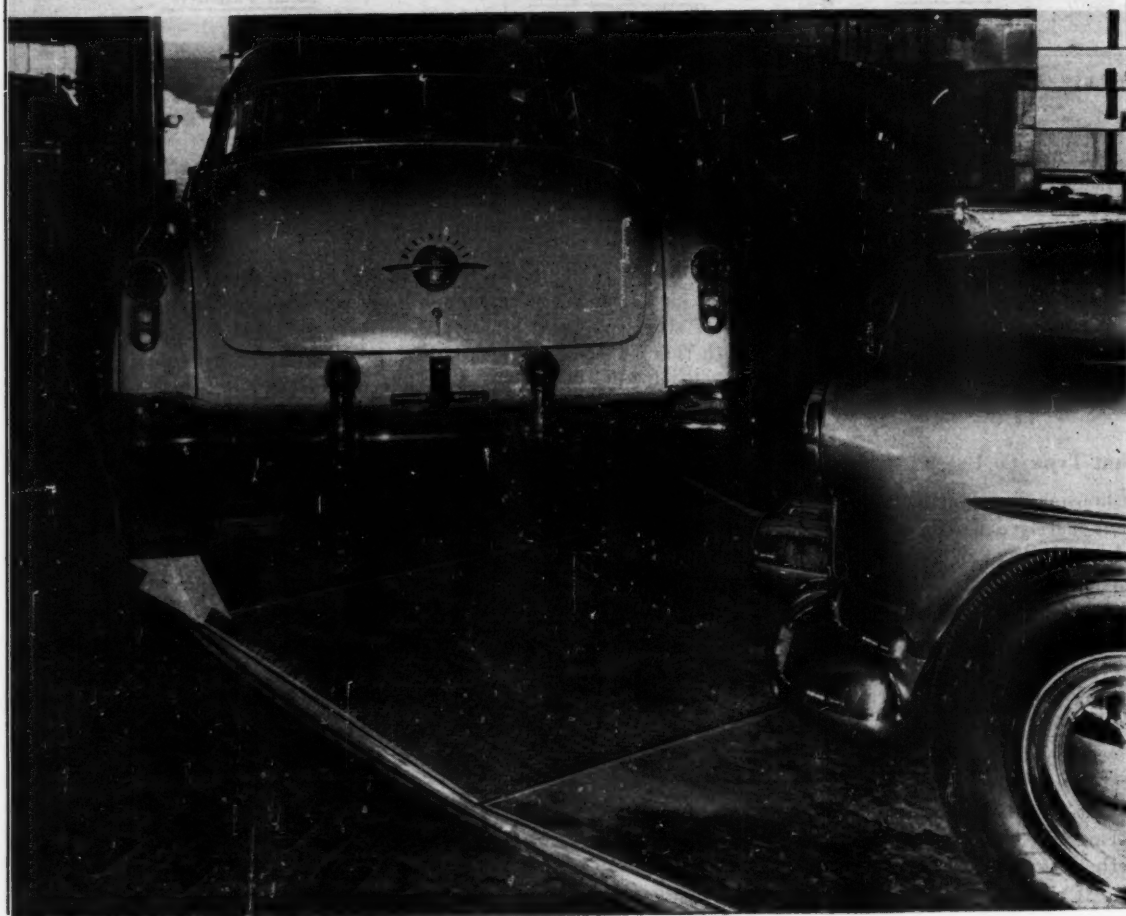
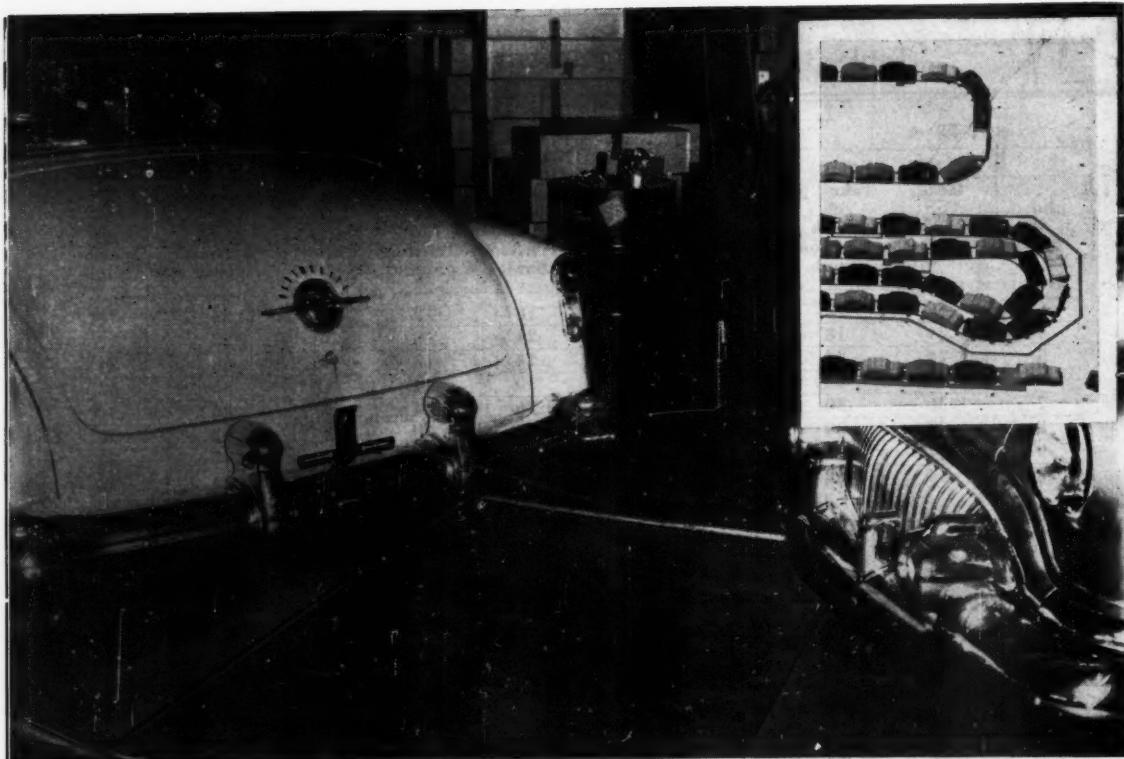
heavy lumps at the loading point, the carcass should have enough body to resist this impact.

Finally, the carcass should be flexible enough to operate satisfactorily with the existing pulley diameters. If troughing idlers are used, the belt should have sufficient transverse flexibility to conform to the idlers.

After a suitable belt carcass has been selected, there are four more principal factors which determine the type of belt to be used. They are:

1. Width and Speed Combination. The combination of belt width and speed, together with the weight of the material, will determine the belt capacity or its possible rate of loading. In addition to the weight of the material, another consideration is the material size and the ratio of fines to lumps. The lowest possible speed is often used to get a greater load on the belt surface.
2. Cover Gauges. The gauge of the top cover depends on the loading conditions and the size and type of material carried. For bottom covers, a $\frac{1}{16}$ in. gauge is usually standard on permanent installations. This varies with very light or heavy service.

(Turn to Page 84)



Here's An Unusual Conveyor That's Designed For

Moving Large Elements At Floor Level

General Motors Corp. is using an unusual type floor conveyor to carry automobiles from final assembly through such operations as repair, trim, paint, etc., in its plant located at South Gate, California. The conveyor is unique in that it carries automobiles on their own wheels in a straight line and also around 90° and 180° turns without transferring to another conveyor. In effect it is like taking a straight line conveyor and wrapping it around a 180° turn forming a "U" shaped path of travel.

Here Are the Details

The conveyor is made up of a series of two caster-mounted metal pallets with a metal plate covering the gap between pallets. The former measure 6'-6" wide by 7'-2" long; cover pallets are 6'-6" wide by 4'-8" long and are connected to the other pallets by loose fitting pins. The caster-mounted pallets are 20'-0" on centers and two caster-mounted pallets and two cover plates constitute a station. Each conveyor length must be a multiple of 20'-0". The casters ride in a shallow one foot pit beneath the floor and the entire conveyor is pulled by a single strand of #678 drop-forged chain. When operating around corners, the conveyor has a turning radius of only

18'-". The installation consists of three conveyors, each 1000'-0" long and each conveyor has two drive units.

Other important features of the set-up include: (1) easy maintenance . . . if necessary, pallets can be readily removed; (2) cover pallets are checkered while others have a smooth surface for articulation of the cars around turns; (3) most of the lines can be regulated for travel from 4'-0" to 30'-0" per minute; the two drives on each conveyor are synchronized.

Here's How It Works

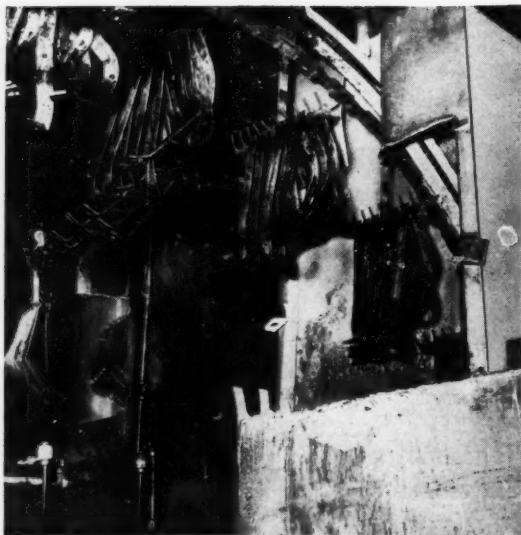
After final assembly, a car is driven onto the start of the line so that one rear wheel rests between two lugs (inverted angles) on one of the caster-mounted pallets. This rear wheel acts as an anchor point so the car can adjust itself to the motion of the pallet when going around turns. When the straightaway is reached again, the car will take its original position. In many cases, operators ride with the car as they are working. The conveyor is flush with the floor so that cross traffic may proceed at will.

The new conveyor has eliminated all transferring between parallel lines; a great time and effort saver. Only a very small part of the conveyor is unused, since what would normally be considered as the return run is nearly all used for transportation.

While the conveyor is being used only for handling cars, the same type, equipped with fixtures on the pallets, can be used for assembly operations of many other products.

Mr. E. Christopher, plant engineer of the South Gate plant, feels this type of carrier can be the answer to many of industry's problems of transporting loads around bends and corners.

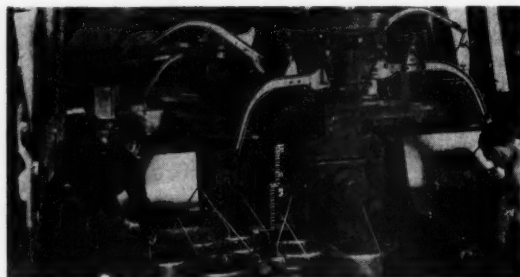
←
TOP VIEW shows floor conveyor transporting cars around bends—inset shows model of G. M. line. **BOTTOM PHOTO:** Here's how cars are anchored on pallets . . . rear wheel rides between inverted angles (see arrow); rest of car articulates when traveling around 90° and 180° turns.



OVERHEAD CONVEYOR operating in U-shape reduces floor space requirements in this dual purpose salt bath at Chevrolet-Saginaw Transmission Plant. It carries bumper brackets through hot spray, dry, salt bath, rinse, pickle, hot rinse, and hot soluble oil dip, automatically. No in-between handling is needed.

PICKLING

A far cry from old manual methods is the pickling equipment shown in these three photographs. Good handling has been an important factor in eliminating waste time between dips and in increasing production in every case.



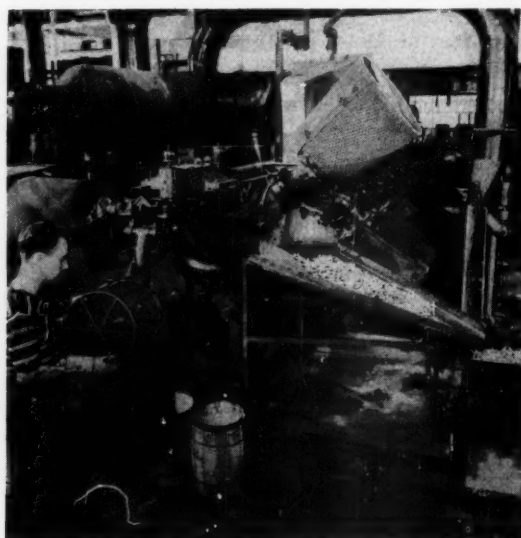
METAL BASKETS at Burroughs Adding Machine Co. carry parts through the pickling process. Operator (left) loads baskets, immerses them in spirits tank, then attaches them to arms on pickling machine. It's automatic until operator at right transfers parts to containers and loads them on trucks.

PLATING

Automatic plating operations, made possible through handling equipment like that shown in the accompanying four photos insures a uniformly high grade product, saves floor space, increases production and minimizes the problem of human error in hand dipping.



RACK PLATER is used by Ford Motor Co. for parts that cannot be placed in basket type holders. A special type conveyor is used to carry parts through the dip tanks. Holders on the racks are designed to touch parts being plated in spots which can not be seen afterward.

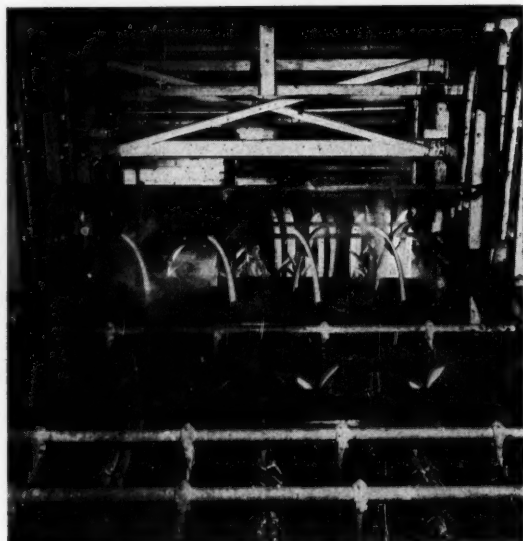


EACH BASKET of this plating equipment at Westinghouse Electric Corp. advances through the tanks automatically at pre-determined speeds. Over 1½ tons of parts go through the 3½ hour sequence each day. Operator performs both loading and unloading operations.

14 Ways To Handle Parts In Process



"PUSH-THRU" PICKLE LINE continuously cleans non-ferrous alloy strip at Riverside Metal Co. Inserted at right, strip emerges at left, is automatically recoiled, placed on discharge conveyor and removed to pallets which are picked up by fork trucks for further processing.



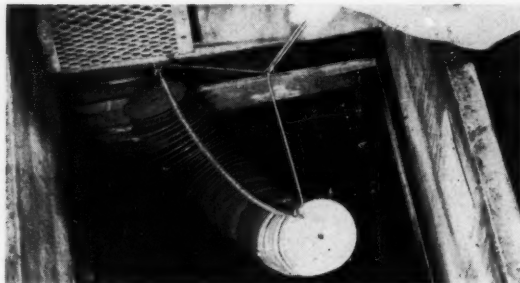
CHAIN CONVEYOR at Chevrolet-Saginaw Transmission plant lowers bumpers into each tank of the electro-plating operation. After emerging from final rinse, bumpers are transferred to the overhead conveyor shown in background of picture for polishing operation.



MECHANICAL HANDLING made possible this gigantic chrome plating tank at Ford Motor Co. Enough headlight and tail light parts are processed in one hour to equip 600 automobiles. Elevator conveyors are used to dip the thousands of parts which are processed each day.

DEGREASING

Good degreasing handling provides speed, cleanliness and safety. Degreasing equipment may be part of complex processing arrangements or it may be as simple as a screen door spring. Either way, the right equipment can produce substantial savings.



ORDINARY SCREEN DOOR SPRING makes degreasing of these small aluminum blanks at Westinghouse quick and easy. The spring is stretched for insertion of blanks and after degreasing, is restretched for removal. Degreasing time has been reduced over 20 percent.



ONE-TON ELECTRIC HOIST operates on an oval monorail track above degreasing tank at United Mfg. Co. Hoist and company-designed racks have upped unit loads from 50 lb. to 2000 lb. The parts, components for lighting fixtures were handled singly, now 20 or more at a time.

Handling Parts In

ANNEALING

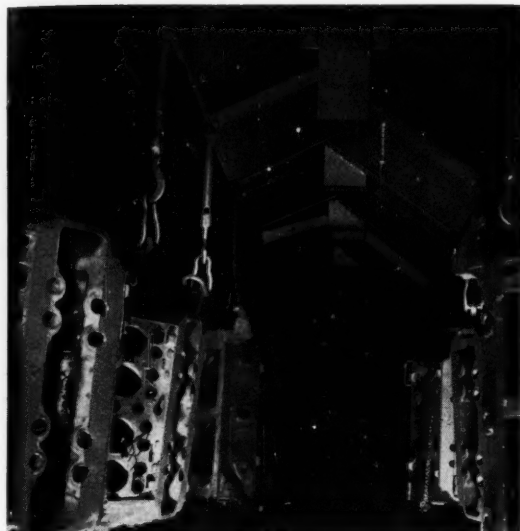
Precise, fast handling is a must in annealing. The two systems illustrated use good handling arrangements not only to keep production moving, but also to make sure that each piece remains in the various stages of the operation exactly the right length of time.



ROLLER CONVEYOR is used to move trays of coils inside this electric annealing furnace at Riverside Metal Co. A hydraulic ram pushes three trays from charging vestibule through the annealing chamber through the cooling chamber and out the discharge end (right background).



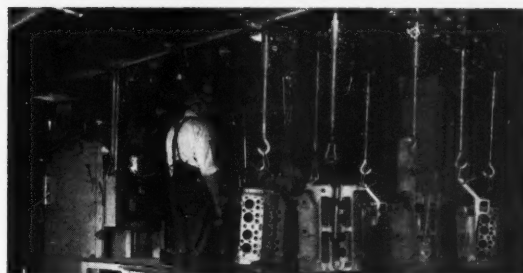
A CONTINUOUS PROCESS from annealing furnace to machining operations at Chevrolet-Cleveland plant. Castings are dipped into five separate tanks starting with furnace at right and ending with oil dip at left. The operation is automatic and requires only loading and unloading.



CHAIN CONVEYORS are equipped with special arms to rotate castings as they pass in front of shot blast wheels, permitting good coverage. The castings, Ford cylinder blocks, move rapidly from station to station within the cabinet, but move slowly through each blast stream.

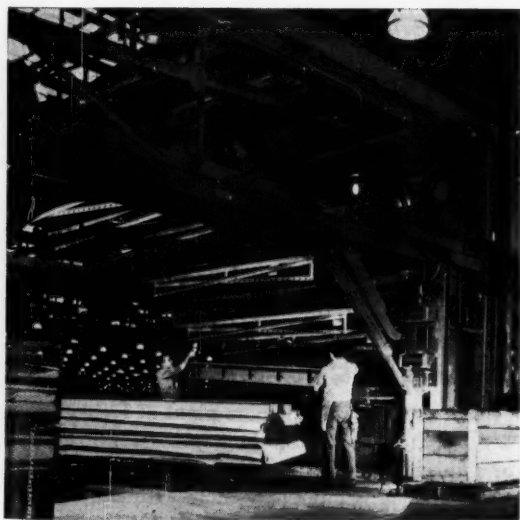
SHOT BLASTING :

Well planned handling systems can make any type of blasting operation easier and faster. It assures complete blasting and in the case of heavy parts like those in the accompanying illustrations, reduces worker fatigue.



DRAG CHAIN CONVEYOR (hidden by operator at left) carries castings through internal cleaning cabinet. Chain conveyor has moved material through external shot blast cabinet (in preceding photo) directly to this point, eliminating practically all waste time.

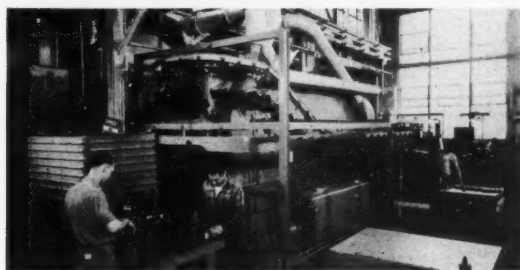
Process continued



BONDERIZER RACKS carry bus ducts at Westinghouse Electric Corp. The ducts will be bonderized and then degreased, rust-proofed, painted and baked in a 95-minute cycle. They will be deposited into and removed from five different tanks in the bonderizing process alone.

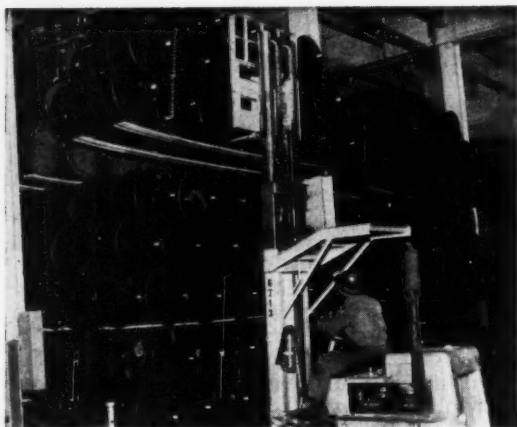
PAINTING

An even coat, good drainage in dipping operations, and of course a high rate of production are just several of the advantages which good handling in surface preparation, painting and baking can bring you. When all the operations are combined into one sequence, space savings are great, too.



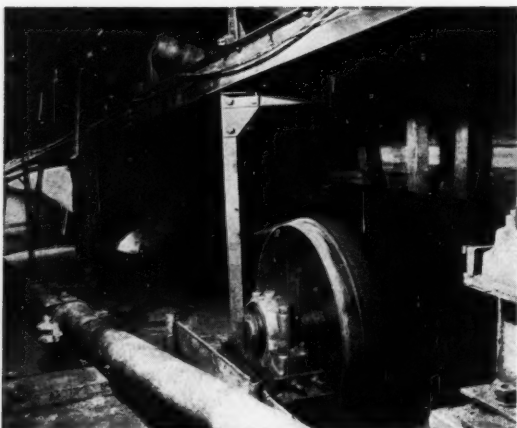
FINISHING EQUIPMENT washes, phosphatizes, rinses, dries, paints, and bakes 1440 generator regulator covers per hr. at Ford Motor Co. It requires little space. Loading is done at left, unloading at right. Parts hung on angle for good drainage and elimination of air bubbles.

COST CUTTING BRIEFS . . .



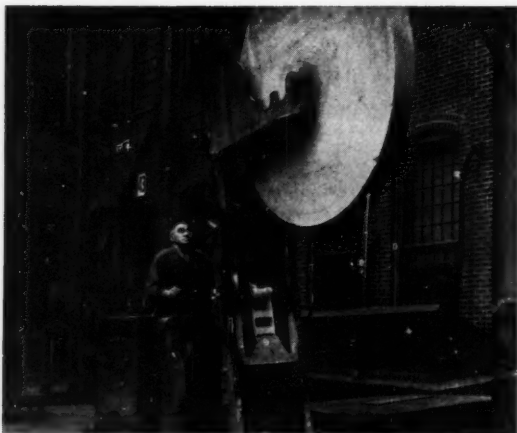
HANDLING LARGE NUMBERS OF DRUMS

Unit loading of oil drums at the Naval Fuel Supply Depot, Point Molate California makes possible the handling of 18 drums at once. A jig platform which can be set up aboard a barge or wherever convenient has two notches at both ends. Two strips of steel strap fit into the notches over which two one-by-six planks are placed. Then the drums are placed on in rows of seven, six, and five drums constructively. The straps are passed over the 18-drum unit, and tightened and the package is ready to be either crane-lifted or fork-lifted.



FOR MOVING FROZEN BULK MATERIAL

Turnover belt conveyor systems have been moving iron ore from mines to surface stockpiles even in the coldest winter months in mines located near Ishpeming, Michigan. Previously, belt systems shut down for four months, starting about Dec. 1, due to freezing difficulties in extremely low temperatures. This belt turns itself over after delivering its load. The clean side always runs on top of the return idlers, and clogging or damaging buildup of tacky materials on idlers or pulleys is eliminated.



HANDLING LARGE, CUMBERSOME LOADS

Fork truck used by Philadelphia plant of Henry Diss-ton & Sons, Inc. moves this huge grindstone through use of a special rigging. Devised by the plant's engineers, the rigging is interchangeable with the conventional type forks for use in handling palletized material. The grindstone will be transported directly to the grinding department and installed by the truck.

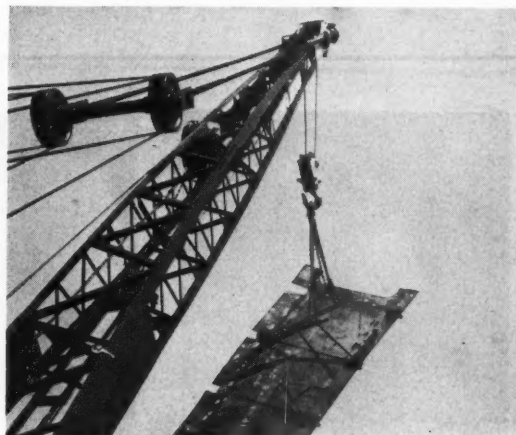
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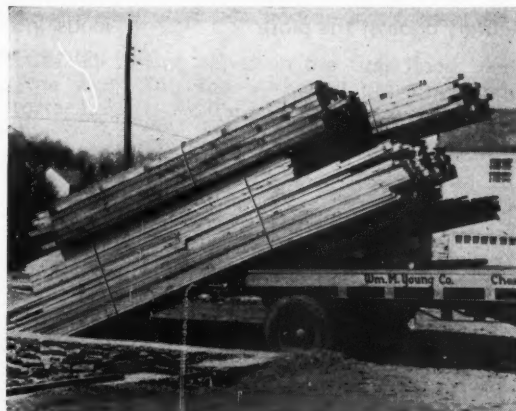
TRANSPORTING JAGGED SHEETS OF METAL...

Two-leg chain sling suspended from a third chain leg from a mobile crane easily lifts a piece of scrap in the Modena, Pa., yard of Luria Bros. & Co., Inc. At each end of the legs are U-shaped fingers which are hooked around notches on the sides of the sheet. As the load is lifted, tension is increased on the two legs, securing the load. When the load is released, the legs are slackened and the fingers automatically disengage from the sheet. For other irregularly-shaped scrap, Luria uses magnets to move loads. For handling, where magnets can not be used, many other attachments can be employed. (See the article, 26 Ways to Handle and Store Steel in the October, 1951 issue).



FOR SHIPPING LOAD UNITS.....

Steel strapping is used here to make lumber shipments easy to handle, easy to tally, and pilfer-proof. Instead of handling single boards, or two and three at a time as is so often necessary, large bundles of random lengths or prepared sizes are strapped together and handling is done with an industrial truck. Unloading at the destination becomes a simple, speedy operation. This method of packaging has also been used successfully in freight car shipping of lumber.

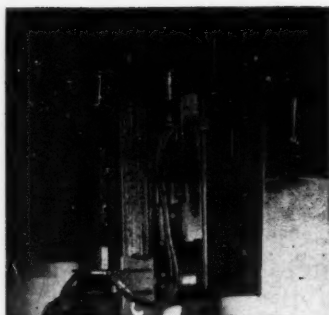


WHEN VIBRATION IS A PROBLEM.....

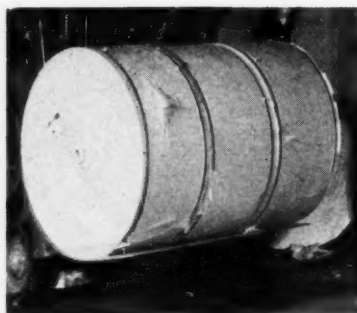
Palletized machinery at United-Carr Fastener Corp. has resulted in reduced vibration damage, and easy movement. Formerly, production machinery was bolted to floors, resulting in many bolt holes, and damaging vibration to the building structure. Now each machine is mounted on an individual pallet which in turn is set on hard rubber pads. Fork trucks are used to pick up machines to reposition them or to carry them to maintenance department for general repairs.



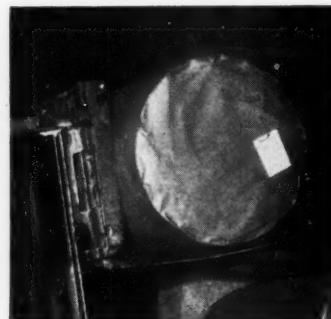
Here Are 15 Ways To



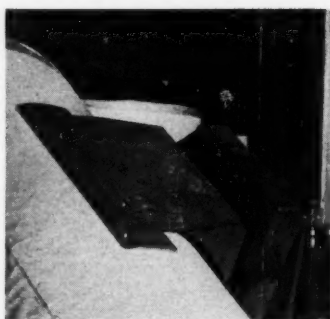
1. A PIN, inserted into the core of a roll, hydraulically pulls the load securely against the plate.



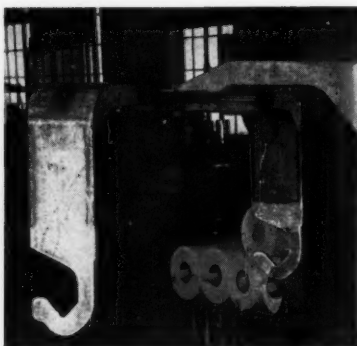
2. SCOOP ATTACHMENT cradles roll during handling. Attachment moves loads in horizontal position.



3. STANDARD FORKS are inserted under rolls between wooden stringers which separate the tiers.



4. CLAMP WITH ROLL-OVER DEVICE grips rolls. Handles them in a horizontal and vertical position.

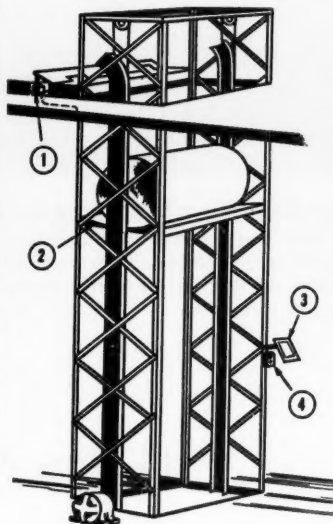


5. SPECIAL HOOKS at front of truck carry rolls having metal bars inserted through their cores.

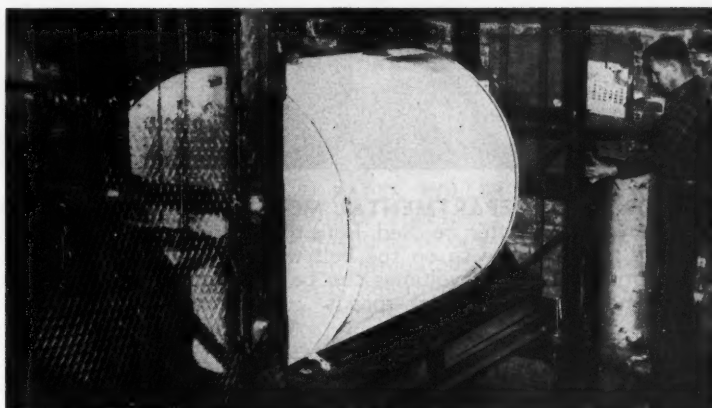
You can use
these attachments
on Industrial
Trucks

. . . Or You Can Use Some of the Equipment Shown

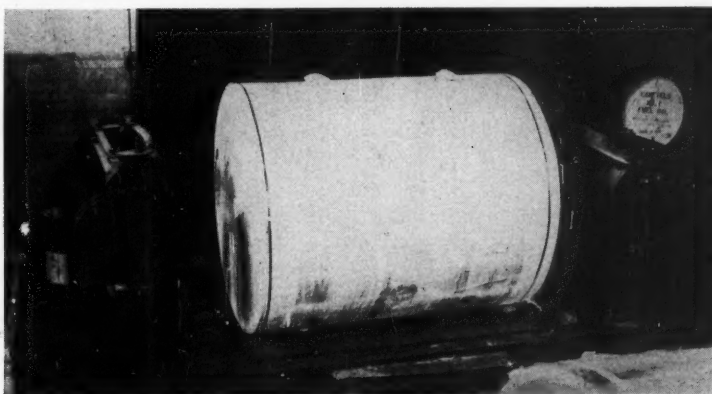
Handle Paper



(1) **RETURN SWITCH** which automatically sends elevator to first floor; (2) V-shaped platform for retaining load; (3) Stock notation tally sheet; (4) Starter button for elevator.



6. ELEVATOR RECEIVES roll of paper on the first floor. An operator rolls the load onto the V-shaped platform and actuates the starter button. At the same time, he notes the load on a tally sheet.



7. ON THE SECOND FLOOR, the platform automatically tilts, causing the heavy roll to move forward on a rack on the floor. This also actuates the return switch which sends the elevator back to first floor.

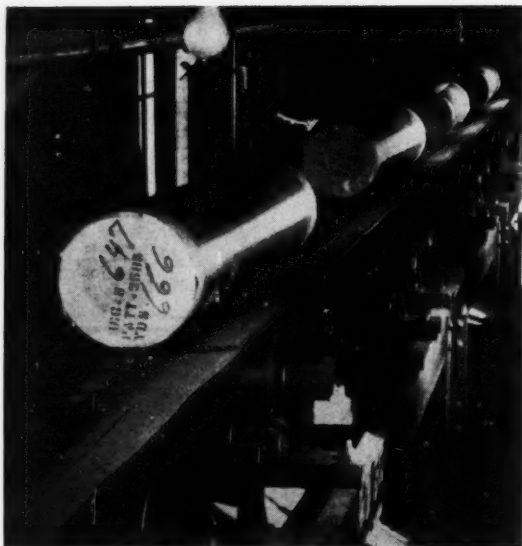
You can use
this System

... for Inter-floor ...

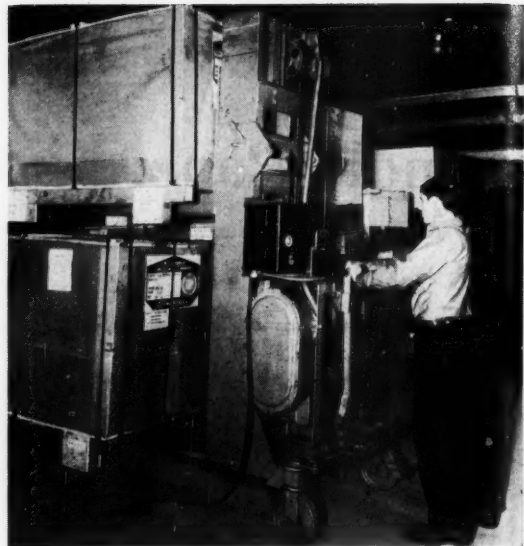
Handling

on the Following Two Pages



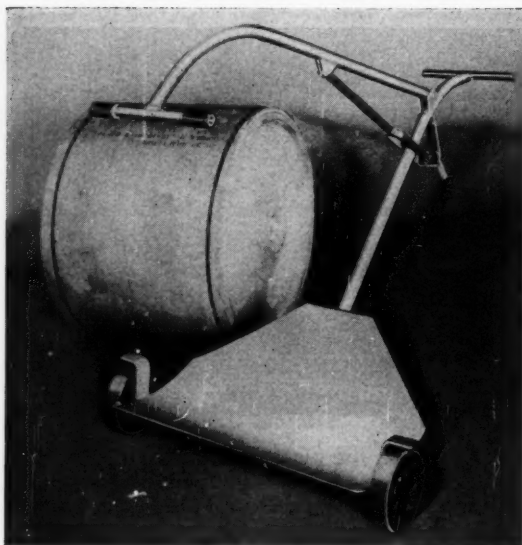


8. FOR INTER-DEPARTMENTAL MOVES, a conveyor can often be used. Rolls of paper are laid length-wise on the belt which is slightly troughed. Large volumes can be moved at one time, at relatively high speeds.

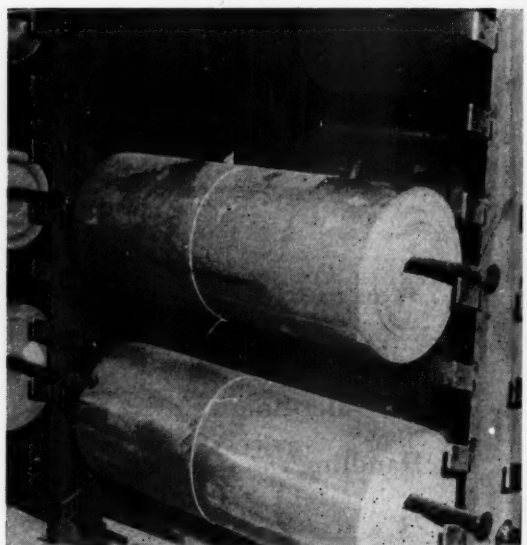


9. FOR STACKING FLAT SHEETS OF PAPER, this high-lift "walkie" spots skidded loads. Strapping secures the load; wooden planks protect the paper against cutting from the metal, and provide added strength.

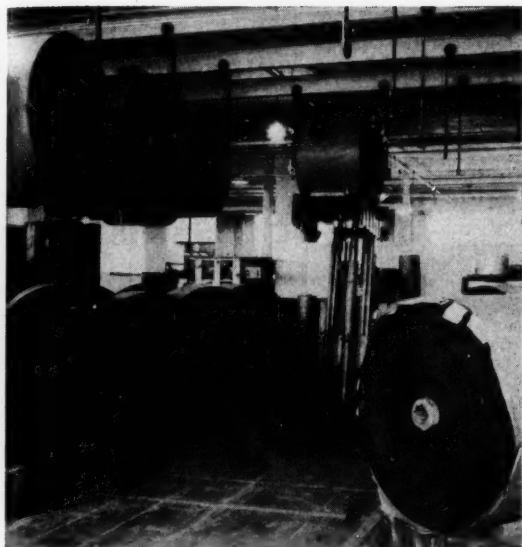
15 Ways To



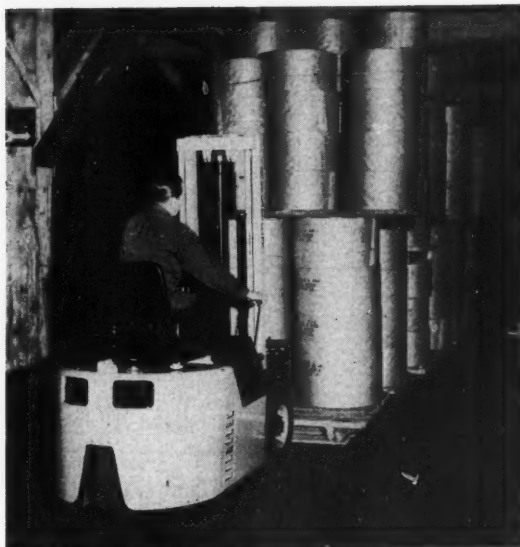
12. SPECIAL HAND TRUCK for handling rolls consists of a cradled platform and a long swinging arm which has a cross bar at one end. The bar supports the load on the platform during travel.



13. FOR STORING ROLLS, a metal bar is inserted through the core. Bars are placed on lugs which are a part of these special racks. Large amounts of paper are stored in small area.

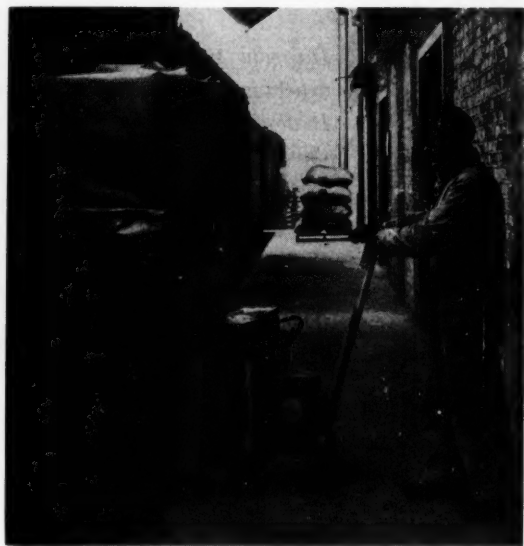


10. CEILING STORAGE is another way to save space. U-shaped support is attached to trolleys on overhead track, is moved as necessary. As shown, fork trucks place and remove the rolls.

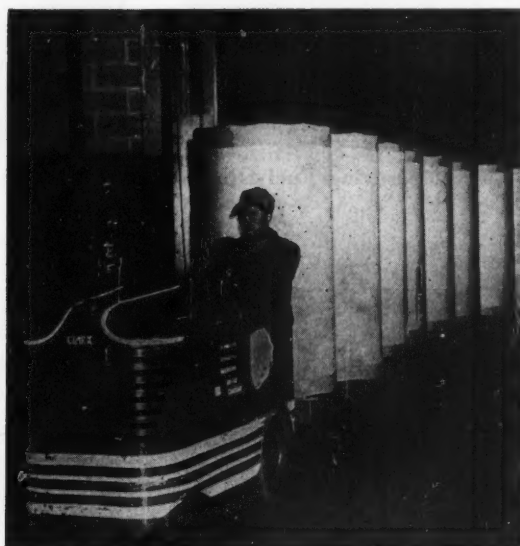


11. PAPER ROLLS CAN BE PALLETIZED too. This fork truck can handle a large volume at one time, permits use of air rights for storage purposes. For other truck attachments, see first page of story.

To Handle Paper . . . continued . . .

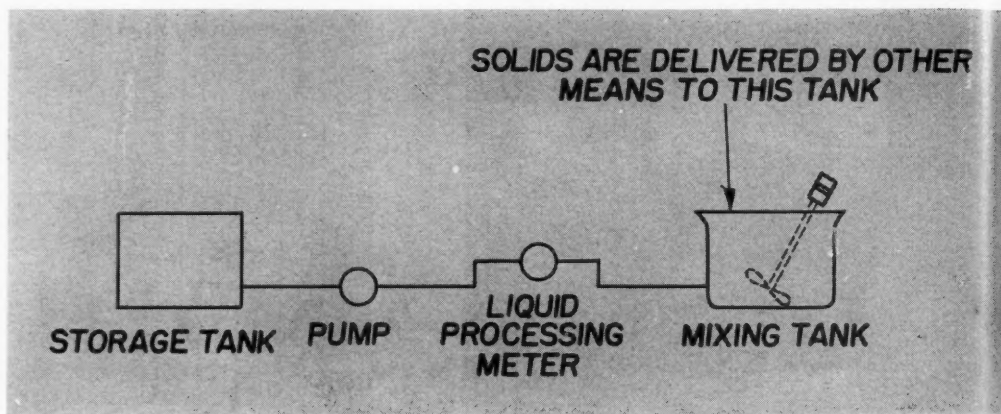


14. POWERIZED "WALKIE" moves palletized flat stock from incoming rail cars into the plant. These trucks are widely used in plants having weak floors, in crowded production and storage areas.



15. TRACTOR-TRAILER TRAINS transport large loads which must be moved long distances. Rolls may be placed horizontally or vertically on trailers depending on other handling equipment.

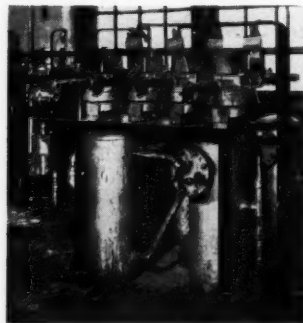
How To Blend Liquids With A Dry Material:



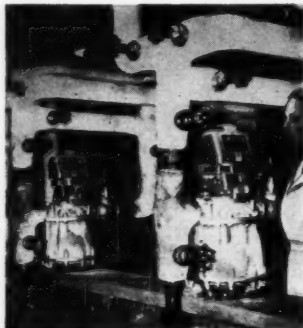
Here Are Four Typical Applications
of Liquid Handling Equipment . . .



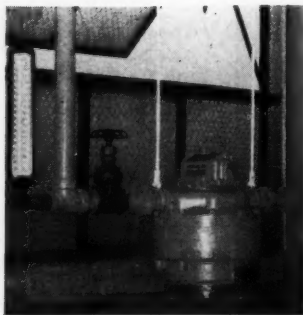
Measuring Fuel Oil



Processing Solvents



Measuring Chocolate

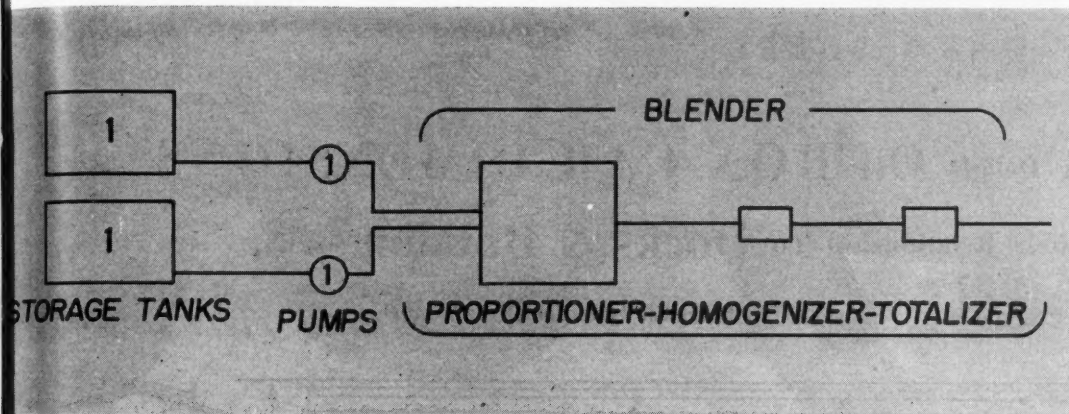


Blending Alcohol

Liquid

Did you see Part I of this article in the February issue? It described how liquid handling equipment is used in metal working plants. Also, in answer to many requests, reprints of both of these articles will be available shortly. We'll be glad to supply them as our stock will permit.

How To Blend Two Or More Liquids With Each Other:



and Handling Is Material Handling

Part II — How Liquid Handling Equipment Is Used In Processing Industries.

If you are in a processing industry and are using liquids, chances are you can speed and simplify the receiving, storage, handling, packaging and shipping of your product by using modern liquid handling equipment. More and more continuous automatic liquid blending equipment is used today in breweries, edible oil blending, soap manufacturing, oil refining, liquid wax manufacturing, soft drink bottling and many, many other industries.

How Can Liquid Handling Equipment Be Used During Processing?

Liquid handling equipment can be used from start to finish in many processing plants. If raw materials arrive in tank cars and/or trucks, they can be removed by pumps; meters are used to check accuracy of the incoming loads. Liquid handling equipment is also installed for such other operations as blending of ingredients, feeding to and from storage tanks, filling shipping containers or loading bulk carriers.

One of the main advantages of a pipe-line handling system is that storage of liquids can, if necessary, be

at some distance from the main processing plant; even two or three blocks away. Storage can also be underground to save valuable surface area for safety reasons. It is possible to tie-in scattered locations both during storage and processing.

Typical Batch Processing and Continuous Blending Installations

The diagrams in this article give typical installations when batch mixing one or more liquids with one or more solids as well as the continuous proportioning and blending of two or more liquids with each other. Through the use of automatic blending and proportioning systems, all intermediate handlings are eliminated. Any number of different liquids can be accurately and thoroughly blended in the required proportions; and there is no waste or bad batches because of human error. And since no open mixing kettles are needed, there is no exposure of the liquids to the atmosphere. Oxidation is thus minimized and safety is enhanced.

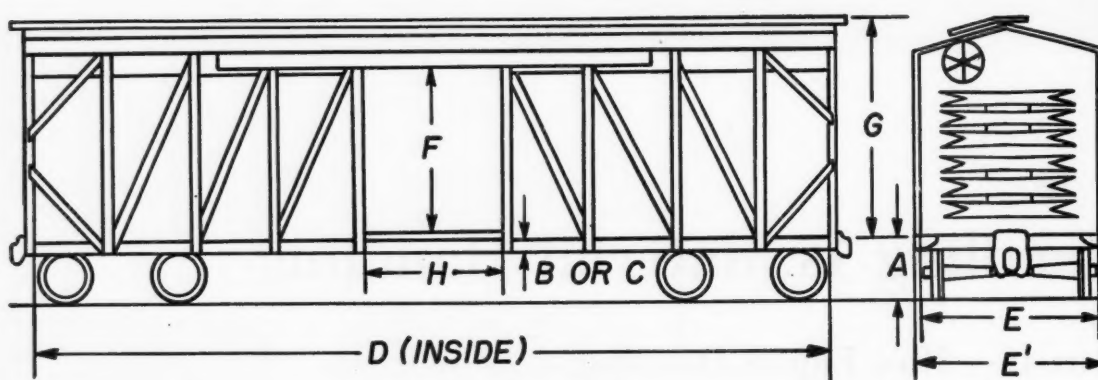
Story Continued on Page 106

HANDLING AND PACKAGING DATA SHEET

This data was furnished
through the courtesy of
Association of American Railroads

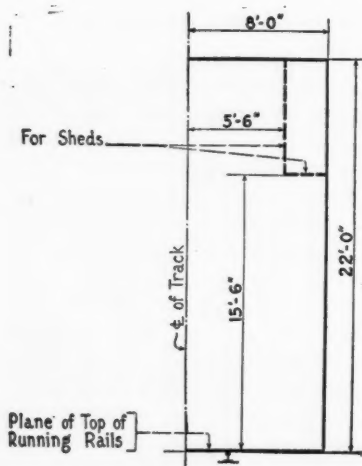
Further Details On BOX CAR DIMENSIONS And Their Relationship To Docks & Buildings...

(See December Issue For Other Details)

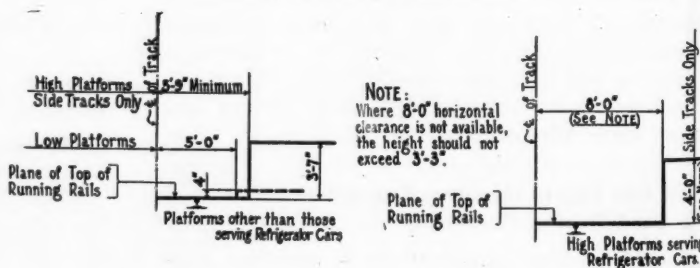


Distance From Top of Rail To Car Floor	Thickness of Flooring		Inside Length of Cars (D)	Width of Box Cars		Box Car Door Height (F)	Box Car Height (Inside at Eaves) (G)	Box Car Door Width (H)		Automotive Box Car Door Width
Standard Old Cars (A)	Present Cars (B)	Newer Cars (C)	40'6" or 50'6"	Inside Width (E)	Outside Width (E')	9 1/2' (standard maximum)	10' to 10'6"	Min. 6'	Max. 8'	15'
3'7 3/4"	3'11 1/4"	1 1/2" 2'-2 1/4"		9'2"	10'8"					

Clearance Diagram for Buildings and Sheds Adjacent to Side Tracks

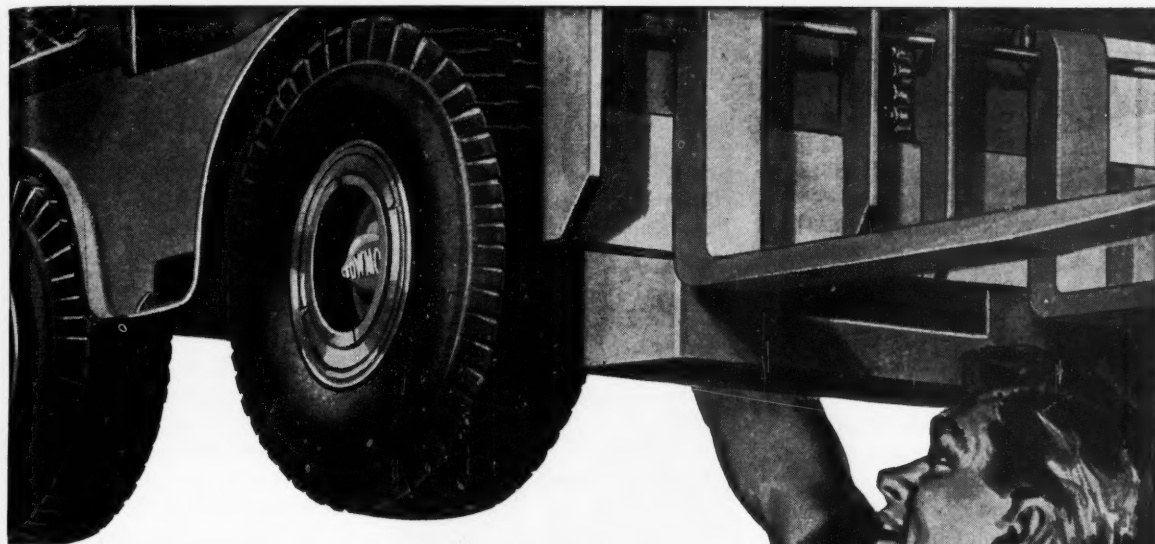


Clearance Diagrams For Platforms



SPECIAL NOTES

1. The clearances shown are for tangent track.
2. On curved track the clearances shall be increased to allow for the overhang and the tilting of a car 85 ft. long, 60 ft. between centers of trucks, and 14 ft. high.
3. The superelevation of the outer rail shall be in accordance with the recommended practice of the American Railway Engineering Association.
4. The distance from top of rail to top of ties shall be taken as 8 in.
5. Legal requirements to govern when in conflict with dimensions shown.



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FLOW • MARCH, 1952

83

FLOW SALUTES THE WUNSCH FOUNDATION

FLOW respectfully tips its hat to a truly outstanding man in the material handling field. He is J. W. Wunsch, distinguished engineer, president of the Silent Hoist & Crane Co., who, without fanfare, has established a fund "for the purpose of stimulating the thinking of engineering students with aptitude or special interests in the art and science of material handling."

Grants have been given such schools as Columbia, Polytechnic Institute of Brooklyn, M.I.T., Cornell, Georgia Tech, University of Pittsburgh, University of Michigan, University of Wisconsin, Penn College, Wayne University, University of Florida, Newark College of Engineering, Purdue and Illinois Institute of Technology. From the invested returns of these grants, cash

prizes are awarded each year to students submitting the best papers on any subject dealing with material handling. The Wunsch



J. W. Wunsch
President
Silent Hoist & Crane Co.

Foundation has no control over the judging—which is done by the college faculty. The papers

remain the property of the students. The number of prizes given by any given school is determined by the faculty.

As Mr. Wunsch stated to us recently, "it's like the old adage of leading a horse to water. We are merely leading a student to material handling and letting him explore the subject from there—for the betterment of himself and the material handling field as well."

Mr. Wunsch has gone out of his way to avoid publicity. He has gone about his task with soft steps and a desire to aid the "material handling engineer" of tomorrow. We hope that other firms will follow in the footsteps of this pioneer and foster the further education of the men who will inherit our field in the years to come.

RUBBER BELTING . . .

(Continued from page 67)

3. **Quality of Grade.** The grades of belting, as rated by the Rubber Manufacturers' Association, fall into these three classifications:

Grade I—3500 to 4000 lb. per square in. cover tensile; 20 to 24 lb. fabric friction rating.

Grade II—2500 to 3000 lb. cover tensile; 16 to 19 lb. friction rating.

Grade III—800 to 1000 lb. cover tensile; 12 to 15 lb. friction rating.

Very often, belt quality is determined by past experience in the same or similar service. However, obvious types are often indicated, as in the handling of hot or abrasive material.

4. **Cost.** Certainly not the least important consideration, the best belt is the one which gives the lowest cost per ton of material handled in combination with proper carcass construction, cover gauges and belt quality. All other factors which govern the correct selection of belting should not be overlooked in an attempt to reduce the initial cost.

How To Determine Belt Specifications

Once all the general requirements of the proper belting to use are known, the next step is to figure out the actual specifications. There is a minimum amount of information necessary to make a good belt recommendation, and this information is broken down into the following 11 components:

1. **Belt Width.** The width of the

belt determines the value of a factor used to compute horsepower requirements. This factor, designated as "G" in the formulas, is equal to the weight of the belt, plus the weight of moving parts of idlers and the weight of any pulleys turned by the belt per foot of conveyor centers. (See Table 1)

2. **Material Carried.** The size, weight, type and temperature of material carried determines belt cover quality, cover quality, cover gauges and type of carcass.
3. **Loading Rate.** The maximum loading rate should be used for horsepower calculations. Designated as value "C," it is specified on the basis of tons per hour.
4. **Belt Speed.** The belt speed, usually given in feet per min-

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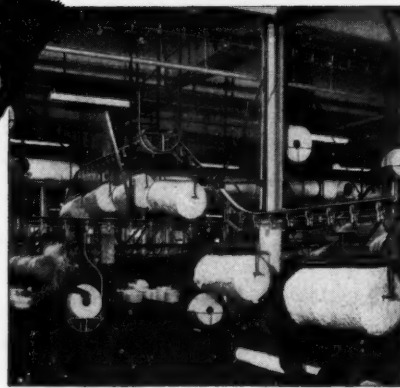
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KENDALL MILLS... solves tough handling problem



Buschman
CABLE
CONVEYORS

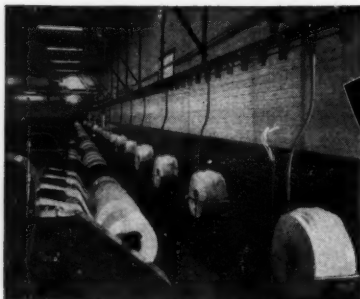
speed
cotton mill's
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ute, is represented by "S."

5. Pulley Centers. The distance between pulley centers is designated as "L," and is the distance along the belt between head and tail pulleys. "L_c" represents the conveyor center length factor in determining horsepower, and equals .55L plus 115. The total belt length usually approximates 2L.
6. Lift or Drop. The lift or drop in feet between loading and discharge points must be known. In calculating, it is the value "H." In certain cases where "H" may be very large, the effect of the belt weight is such that the theoretically-calculated slack side tension may be exceeded. The tension calculation must then be modified.
7. Drive. The type of drive must be known. This includes whether the drive pulley is lagged or bare and the approximate belt wrap at the drive. With this information, the correct drive factor, value "K", may be obtained from Table 2.
8. Take-Up. The type of take-up, whether gravity or screw, must also be known in order to determine the value of "K". If the conveyor is an existing installation, the actual total value of weight applied to a gravity type take-up should be listed. Where gravity type take-up is used, the slack side belt tension often equals approximately one-half the total applied weight. From this actual value of slack side tension, a much more accurate value of belt operating tension is possible than if the theoretical slack side calculated tension is used.
9. Pulley Diameter. Pulley diameters now in use may determine the most satisfactory belt construction, since the construction chosen must be suitable for the re-

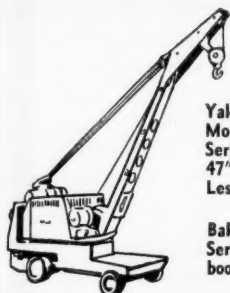
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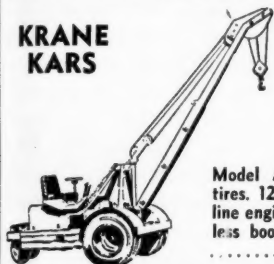
Yale electric crane, 3,000 lb. capacity. Model K42-3. 12' to 19' revolving boom. Serial #43314. Battery driven. Overall width 47". Base length 110". Solid rubber tires. Less battery **\$4,250**

Baker crane, 3 ton capacity. Model CXB. Serial #8048. 12' to 19' telescopic revolving boom. Less battery **\$6,400**

HYSTER FORK LIFT TRUCK

4,000 lb. capacity. Model 40. Height of mast when lowered, 83", height of lift, 42"; overall length less forks 86"; length of forks 36". Pneumatic tires.... **\$2,700**

**KRANE
KARS**



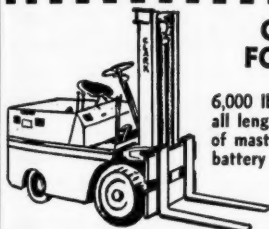
Model AX, 5 ton capacity. Pneumatic tires. 12' to 18' revolving boom. Buda gasoline engine. Overall width 85", overall length less boom 127". Excellent condition. **\$6,500**

Model AX, 5 ton capacity. Solid rubber tires. 12' to 18' revolving boom. Buda gasoline engine. Overall width 74", overall length less boom 10'10". Excellent condition. **\$4,950**

HYSTER KARRY KRANE

5 ton capacity. 10 foot non-revolving boom; overall width 75"; length, less boom, 152"..... **\$3,200**

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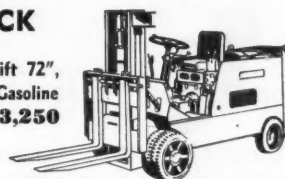


6,000 lb. capacity. Overall width 43", overall length less forks, 88". Lift 104". Height of mast when lowered 83". Forks 42". Less battery **\$3,500**

2 ton capacity. Serial #ECL45242. Battery driven. Lift 108", forks 36". Less battery **\$3,000**

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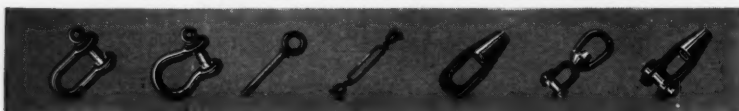
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quired pulley flexing. Recommended minimum pulley diameters are specified in Table 3.

10. Belt Splice. The type of splice, whether by vulcanization or mechanical fasteners, should be indicated in order to determine belt operating tensions.
11. Motor Horsepower Rating. If the motor horsepower rating of an existing installation is known, it may be used as a rough check on horsepower calculation.

Calculating Maximum Operating Tension

As stated previously, in order to select the proper belt carcass, the maximum belt operating tension should be calculated. One way to do this is to calculate the required horsepower at the drive and then translate this horsepower into pounds of tension. (NOTE: Handbooks containing more detailed and complete engineering information are available from belt and conveyor manufacturers.)

For general service, where anti-friction idlers are used, values of " $F_x = .03$ " and " $F_y = .04$ " can be assumed. Then, using the values previously indicated, the horsepower required at the drive pulley is estimated with the following formulas:

HP to operate the empty belt, or

$$X = \frac{G \times F_x \times S \times L_c}{33000}$$

HP to move load horizontally, or

$$Y = \frac{L_c \times F_y \times C}{990}$$

HP to lift or lower the load, or

$$Z = \frac{H \times C}{990}$$

The value of "Z" is positive for an elevating conveyor and negative for a down-grade conveyor.

Thus, the estimated horsepower required at the drive equals X plus Y plus-or-minus Z. Once the horsepower (HP) has been estimated, it is translated into maximum belt operating tension as follows:



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vent damage to battery or charger in case of power failure.

NO MAINTENANCE. Other than an occasional dusting, and an annual oiling of the cooling fan in some types—G-E metallic rectifier chargers will operate for many, many years with no maintenance.

These and many other features make G-E metallic rectifier chargers a timely, low-cost investment for faster, easier materials handling. For information write for Bulletin GEA-5292A, Section 463-6, General Electric Co., Schenectady 5, New York.

GENERAL  ELECTRIC

463-6

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Here's Pin Point Crane Control



Hydrocrane Spots Loads Within Fraction of Inch

Here's why plants, warehouses and yard users find the Hydrocrane in a class by itself. This fully hydraulic truck crane has a combination of features no other unit can match.

Telescoping Boom reaches in and out of windows and doors, box cars, between beams, rafters, and stacks of boxes, bales, etc. — without moving crane an inch. Great for close quarter work in factories, warehouses, etc. with low head room and limited space for maneuvering.

Precision Control. With every crane function fully hydraulic, operator can meter power flow as smoothly and easily as metering flow of water through a faucet. Outriggers set hydraulically in seconds — provide a solid base. No twisting, wracking strains on truck frames — no bouncing on springs and tires.

Simple Operation. Hand levers only — no tricky hand-foot coordination. No brakes or clutches to grab and slip. "Deadman Control" means safety for work crews. If operator lets go, all levers return to neutral — load stops dead.

Two sizes — 1/4-yd. 2-ton, 3/8-yd. 3-ton. Attachments include clamshell, crane hook, 1-yd. material handling bucket, grapples, magnet and dragshovel front end.



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South Milwaukee, Wisconsin

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Effective tension

$$T_E = \frac{HP \times 3300}{S}$$

Slack side tension $T_2 = K \times T_E$ (The actual value often equals the total take-up weight, divided by 2.)

Theoretical Maximum tight side tension (lbs.) $T_1 = (1 + K) T_E$ (The actual value may equal effective tension plus slack side tension, as determined from the take-up weight.)

Belt operating tension (lbs.)

$$T_M = \frac{\text{Max. tight side tension}}{\text{Belt width (in.)}}$$

Using the belt operating tension, as calculated, satisfactory carcass constructions from a tensile standpoint can be selected from Table 4.

Example of Belt Selection

The following is an example of belt tension calculated in choosing the proper conveyor belt for a specific job. Here are the principal factors which must be known before the belt operating tension can be calculated:

Material	Coal, 1" in size
Loading Rate (C)	600 TPH (maximum)
Belt Speed (S)	500 FPM
Pulley Centers (L)	1000 Feet
Lift or Drop (H)	90 Ft. Lift
Drive	Lagged drive pulley at head with 220° belt wrap
Take-up	Gravity type, located near drive
Pulley Diameter	36" head and drive 30" tail and take-up 24" bend pulleys and snubs
Idlers	5" diameter
Belt Splice	Vulcanized

The belt operating tension would be calculated as follows:

$$L_c = .55 L + 115 \text{ or } 550 + 115 = 665$$

$$X = \frac{G \times F_x \times S \times L_c}{33000} = \frac{47 \times .03 \times 500 \times 665}{33000} = 14.2$$

$$Y = \frac{L_c \times F_y \times C}{990} = \frac{665 \times .04 \times 600}{990} = 16.1$$

$$Z = \frac{H \times C}{990} = \frac{90 \times 600}{990} = 54.5$$

Estimated HP at drive pulley = $X + Y + Z$, or 85.

MARCH, 1952 • FLOW

$T_E =$
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$$T_k = \frac{HP \times 33000}{S} = \frac{85 \times 33000}{500} = 5610$$

$$T_l = (I \text{ plus } K) T_k = 1.35 \times 5610 = 7570$$

$$T_m = \frac{\text{Max. tight side tension}}{\text{belt width}} = \frac{7570}{36} = 210 \#/\text{in.}$$

Then by using the permissible stress values listed in Table 3, belting to satisfy the tension requirement can be checked as follows:

$$\text{For 28 oz. fabric} - \frac{210}{35} = 6 \text{ plies}$$

$$\text{For 32 oz. fabric} - \frac{210}{40} = 5.3 \text{ or 6 plies}$$

$$\text{For 36 oz. fabric} - \frac{210}{45} = 4.7 \text{ or 5 plies}$$

$$\text{For 42 oz. fabric} - \frac{210}{53} = 4 \text{ plies}$$

$$\text{For 48 oz. fabric} - \frac{210}{60} = 3.5 \text{ or 4 plies}$$

All conveyor equipment manufacturers and belting manufacturers have tables which list permissible belt operating tensions. The tables will be similar to the Table 4, but values will vary. The various manufacturers also have tables relative to permissible pulley diameters, and belt constructions.

In the foregoing example, the 6 ply 28 oz., 6 ply 32 oz., 5 ply 36 oz., 4 ply 42 oz., or 4 ply 48 oz. carcass constructions would all satisfy the tension requirement.

The 4 ply 42 oz. construction, however, would be the lowest in price and would also satisfy the usual pulley diameter, troughability, and body requirements for a good belt carcass recommendation. A cover and quality recommendation might be $\frac{1}{8}$ " top cover and $\frac{1}{16}$ " bottom cover of Grade II.

The data in this article was prepared with the cooperation of Edward C. Gregory and Eugene R. Traxler of the B. F. Goodrich Company, Akron, Ohio.

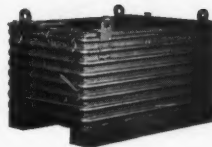
Our thanks also to the following firms for their cooperation: Boston Woven Hose & Rubber Co., Continental Gin Co., The Goodyear Tire & Rubber Co., Hewitt-Robins Inc., Link Belt Co., Quaker Rubber Corp., Stephens-Adamson Mfg. Co., Thermoid Co., United States Rubber Co.

Next Month: Care and maintenance of rubber belting.



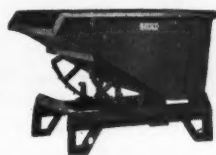
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Save floor space — stack safely from floor to roof. Four way entry for fast, efficient handling. Equipped with crane lugs for movement by crane. Fabricated from heavy gauge corrugated steel to give added rigidity and maximum strength. Thoroughly and securely arc welded for longer, maintenance free life. Made in various sizes and load capacities to suit your requirements.



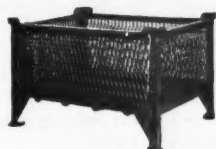
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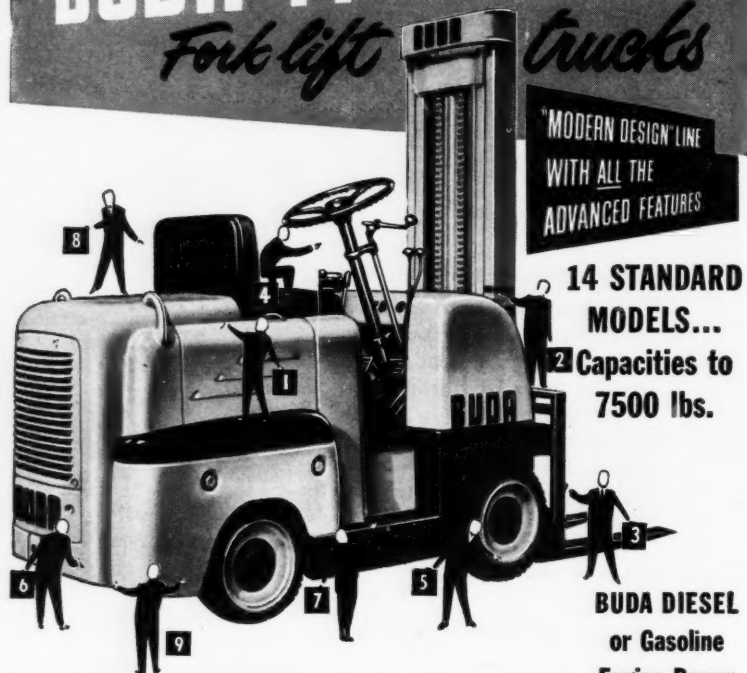
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4 OPERATOR CONVENIENCE—all controls standard and conveniently located; instruments grouped in one indirectly lighted panel in front of operator.

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8 HIGH, SAFE, LOAD-WEIGHT CAPACITY—Balanced design and safe distribution of weight for maximum lifting and carrying capacity, increased traction and greater maneuverability.

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Manufacturers of Material Handling Equipment, Lifting Jacks, Maintenance of Way Products, Earth Drills and Diesel and Gasoline Engines

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POSITIONING . . .

(Continued from page 60)

not excessive. Some may be equipped with demountable roller tops to facilitate the handling of dies and other heavy pieces within the capacities of the tables. However, there are two variations of the elevating table which are designed specifically for handling sheets and dies:

1. Sheet Feeding Tables: Sheet feeding tables are widely used in press and shear work.

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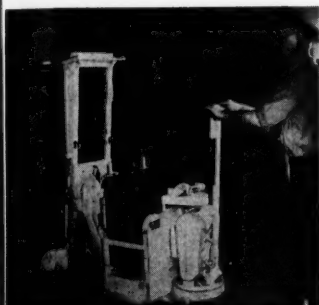
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When one of these units is installed at a machine, the top of a pile of sheets is easily kept at feed line height, and within easy reach of the operator at all times. They are of heavier construction than elevating tables (up to 30,000 lbs. capacity) and, as a rule, the tops do not revolve. Some sheet feeding tables have tops which can be tilted, for use with inclinable presses.

2. Die Handling Tables: Heavy dies can be easily installed and removed from production equipment if they are handled at the proper height with die handling tables. They are usually portable and can also

be used to transport the dies to and from storage racks. Most die handling tables have roller tops so that dies can be easily rolled into position.

Welding Positioners: Welding positioners for both large and small jobs are among the oldest and best-known types of positioning equipment. They are used to raise heavy loads to proper working height, and to keep the work at the most convenient position for the welder. Their use eliminates awkward



LARGE ROLLS of material can be handled and positioned with a walkie-type industrial truck which picks them up in a vertical position and tilts them horizontally for transporting and subsequent removal.

working positions, holds work safely and securely and reduces worker fatigue.

Automatic Positioners: Automatic positioners, activated by a calibrated spring mechanism, keep material always at convenient working level, whether the unit is completely loaded, half-filled or nearly empty. Capacities range from several pounds to 3000 pounds. These mobile units serve as storage, transporting and dispensing units.

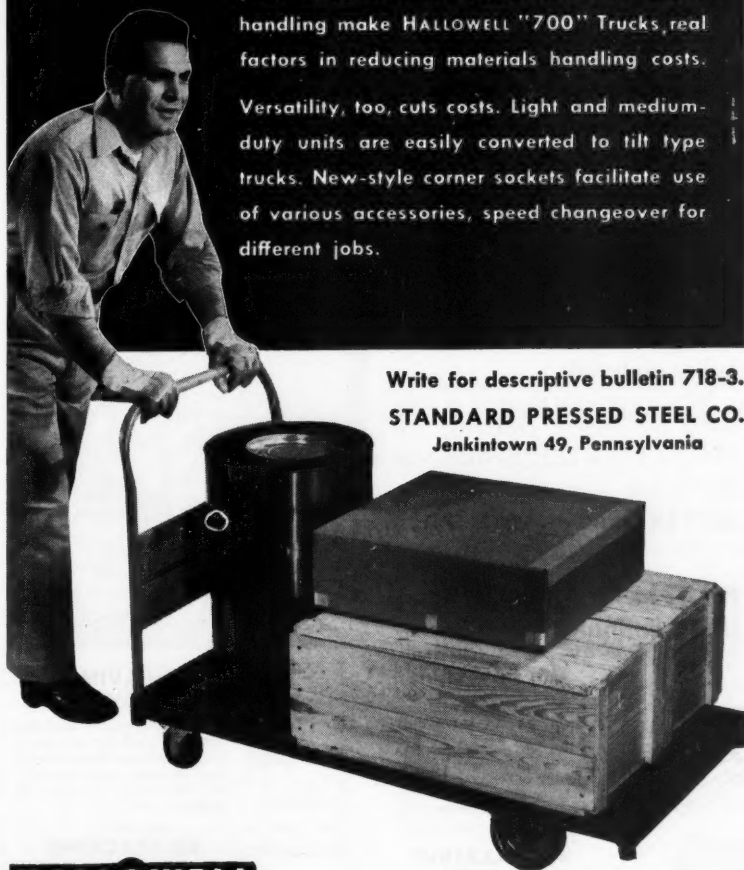
Universal Positioners: There are two types of universal work positioners: small units to hold material for bench work operations, and larger units equipped with floor bases to handle more cumbersome work. Materials can be rotated around three axes, and much handling is saved during prolonged operations where the work must be

HALLOWELL "700" STEEL PLATFORM TRUCKS

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All-steel, heavy-duty, maintenance-free construction and new, functional design which permits better load distribution and easier handling make HALLOWELL "700" Trucks real factors in reducing materials handling costs.

Versatility, too, cuts costs. Light and medium-duty units are easily converted to tilt type trucks. New-style corner sockets facilitate use of various accessories, speed changeover for different jobs.



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held under positive control in a great variety of positions.

Ball Transfers: Ball transfers are designed to move objects at all angles in a fixed horizontal plane. The two general styles of ball transfers are: those which are welded or bolted to steel plates to form a table, and those which are threaded to the ends of pipe mountings bolted to the floor. The table type is most commonly used to handle die blocks and similar heavy loads,

while the other is generally used to handle large plates or sheets at presses and shears.

Jib Cranes: Jib cranes have horizontal booms which can be revolved around a fixed axis. The booms may be mounted on hinged brackets, masts or columns which permit service in a circular area around the base. Manual or motor driven hoists may be moved along the booms to position heavy work or tools into machines, as well

as to raise and lower them.

General Types

Portable Elevators: Although portable elevators are designed primarily for lifting and tiering, they often can be used profitably wherever it is feasible to use the same piece of equipment to bring the work to a machine, position it for the operation, and move it to the next station. Manufacturers of these units have developed many attachments for adapting their equipment to such operations as die positioning, up-ending, positioning drums for dumping, and positioning rolls, reels, cylinders and drums for easy placement into machines. They may also be fixed to the floor and used in assembly and maintenance work.

Stationary Lifts or Elevators: The most common use for stationary platform lifts is at loading platforms to equalize loading or unloading levels of trucks and other carriers. They are usually hydraulic or pneumatic powered. However, stationary lifts or elevators may be installed near such machines as punch presses, for sheet feeding purposes.

Powered Industrial Trucks: Powered industrial trucks, either of the sit-down, stand-up or walking type, are, of course, widely used in industry for loading, unloading, stacking and transporting loads. In addition, attachments and accessories are available to make these trucks useful for positioning if necessary. These accessories include such items as: roll handlers, cranes, upenders and pusher devices for hydraulically pushing loads off the forks or platforms into ovens, racks or onto machines.

Cranes and Hoists: Although jib cranes are generally considered positioning equipment, other overhead equipment used to lift, transport and spot loads, such as bridge cranes, may also be converted to positioning purposes. Hoists, bridges and trolleys may be either manual or powered.

Naturally the specific and general types of positioning equipment just described are not all-inclusive. There are a number of other spe-

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of tiering pallets, boxes and shelves

Utilize more of your available storage space without adding to the floor area with the special PALTIER System.

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PERFECTLY ALIGNED STACKING
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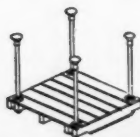
Whatever your storage or material movement problem, the *Flexible* PALTIER System will do the job

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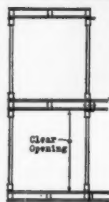
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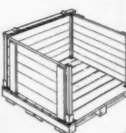
The PALTEAM
converts any standard 3-stringer pallet into a stacking pallet. It is simply a pair of tiering horses. Posts slip fit into sockets and cross bars slip fit over the top of the posts to provide support for center stringer of superimposed pallet.



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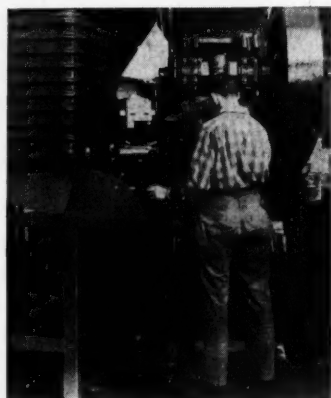
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cialized units which have been developed for many specific uses, such as a hoist which permits one man to safely and easily insert or remove transmitting tubes from their sockets and to transport them between the transmitter and store-room.

For a solution to difficult positioning problems, it is best to contact material handling equipment manufacturers or their local representatives, as they usually have had experience in problems identical with, or similar to, yours.

Study Your Flow of Material

Exactly how many of a plant's material handling operations are devoted to the positioning phase



CONTINUAL FEEDING of parts at the same working level to a machine operator is possible with this drop-bottom box, placed by fork truck onto a positioning stand.

can easily be determined by making up an operation chart. Such a charting and study of the flow of materials should produce some extremely interesting and profitable results.

An example of an operation chart is shown on these pages, and illustrates the flow of metal sheets from the time they are received until they are assembled in their finished form. Since all the plant operations in this chart are assumed, the equipment used and the sequence of operations are purely arbitrary.

A study of the chart will reveal that all of the six transporting and tiering operations are on a mod-

**THIS
\$3300. SYSTEM
SAVES \$1300. A MONTH!**



Lamson Pneumatic Tubes enable well-known manufacturer to ship orders the day received . . . from an inventory of 30,000 items!

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Lamson Engineers designed a system of Pneumatic Tubes which speeds orders, inventory forms, reports and stock transfer slips so rapidly that orders are now filled *on the day received*.

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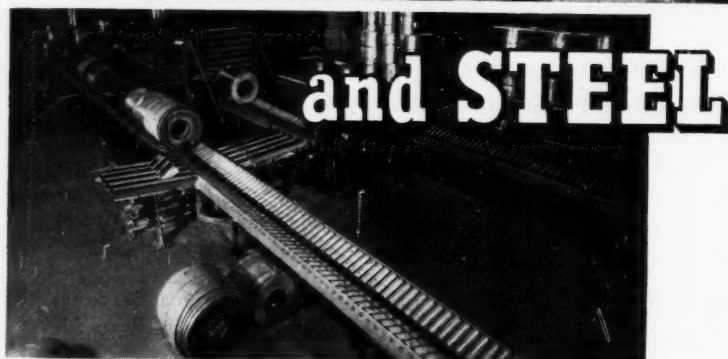
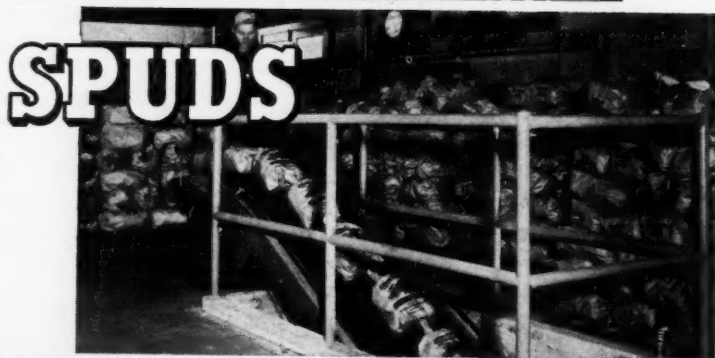
The installation cost of Lamson Tubes was only \$3300. Every month the system saves the plant \$1300. It will continue to pay for itself every 3 months during the many long years of its life. Lamson Corporation, 1300 Lamson St., Syracuse 1, New York. Offices in principal cities.

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ern, efficiently-mechanized material handling basis. However, at the production centers, the manual handling in and out of the machines is the same awkward, backbreaking process that it always was.

This time-consuming manual handling could easily be replaced by efficient positioning equipment. A sheet feeding table would be a logical choice—but since the sheets are handled in comparatively small 2000-lb. bundles, a smaller unit would probably be more feasible to use.

The installation and use of elevating tables in this particular plant would keep the sheets at proper level for feeding at the shear, punch presses and press brake (operations 3, 7, 11, 15). After these productions operations, the sheets would be placed on the elevating tables at convenient heights (operations 5, 9, 13, 17). The material would be handled on pallets as it was before installing the elevating tables.

Thus, the use of these elevating tables would simplify eight of the nine positioning operations. The simplifying of eight out of a total of 20 operations certainly would be well worth the study and the comparative small cost of the equipment installed.

Furthermore, these elevating tables could also be used for handling dies in and out of the machines and for transporting the dies to and from storage, assuming that the dies are not too large to be carried on the tables.

Our thanks to the following firms for their cooperation in preparing this article: American Machine & Foundry Co., Barrett-Cravens Co., Cullen-Friestedt Co., Ginsberg Machine Co., Inc., Hamilton Tool Co., Lewis-Shepard Products, Inc., Mathews Conveyor Co., Moto-Truc Co., Raymond Corp., Revolver Co., Service Caster & Truck Corp.—Ed.

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MEN IN THE NEWS . . .

(Continued from page 18)

. . . at Barber-Greene Co.

Two assistant sales managers have been appointed. **H. W. Newton** will be assistant sales manager of the conveyor division. He was formerly manager of engineered sales. **William G. Gifford**, formerly sales office manager now becomes assistant sales manager of machine sales. Both men will assist **E. H. Holt** who was recently appointed general sales manager.

. . . at Chase Bag Co.

The retirement of **W. L. Patrick**, sales representative for the past 33 years has been announced by **R. N. Conners**, vice-president and general sales manager. His successor will be **R. F. Rhoden**, a Chase representative since 1947. He will continue to operate from Boise as did Patrick.

. . . at Caterpillar Tractor Co.

The retirement of vice-president **John V. Munro** has been announced by **Louis B. Neumiller**, president. Munro has been with the company since its formation in 1925. Serving first as purchasing agent, he became vice president in 1926.

J. W. Mohler, assistant director of sales will become deputy director of the construction machinery division of NPA starting March 15. He is expected to be on leave from the company for one year. During his absence, **W. S. Zeigler**, now manager of Caterpillar's eastern division will take over his duties. **J. A. Justeson**, now assistant manager of the western sales division will replace Zeigler. He in turn, will be relieved by **Frank McNamara** now district representative on the west coast.

T. H. Spencer has been named an assistant to chief metallurgist **G. C. Riegel**. He will have general supervision of all heat treat planning and engineering activities. He will serve with **Frank Vaughn**, assistant chief metallurgist.

. . . at Gerlinger Carrier Co.

Appointment of **H. G. Kraus** to the position of assistant national sales manager has been announced. Formerly a service superintendent for Ross Carrier Co., Kraus will work directly with sales representatives throughout the country for Gerlinger.

. . . at Hyster

Jack Cairns has been appointed district manager with a territory

including portions of Florida, Alabama, North Carolina and Georgia. Most recently, he was a Hyster salesman in Los Angeles.

. . . at Lee Rubber & Tire Corp.

Karl H. Dressel has been promoted to field engineer for the Republic Rubber Div. With headquarters in St. Louis, he will be responsible for contacting the industrial organizations in the state interested in the company's products.

COMPARE... LODOVER WITH ANY FRONT END TRACTOR SHOVEL

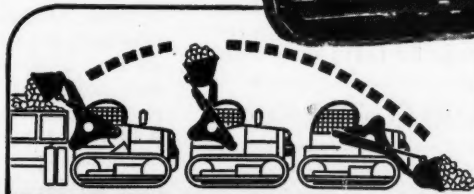
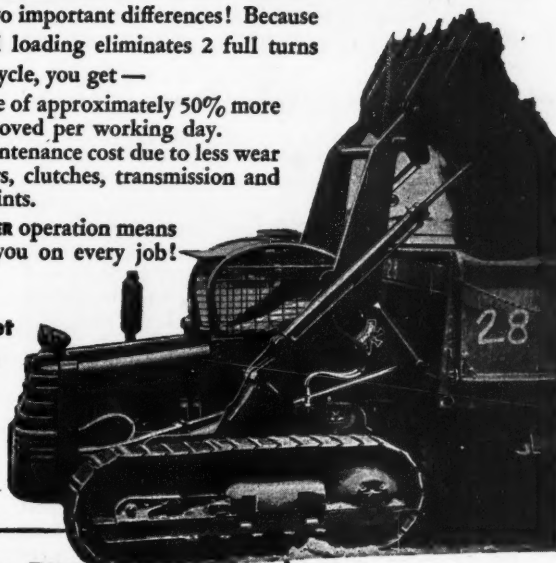
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BULLETINS • BOOKLETS • CATALOGS

The publications featured on these pages were written by experts. They are **FREE** publications. To obtain them use the postcard bound into this issue.

Positive action oscillating conveyors for conveying, feeding, cooling, and screening a great variety of loose bulk materials are discussed in a 24-page booklet offered by Link-Belt Co. It includes dimensions, weights, and capacity and horsepower charts.

Circle No. 217 on Reader Service Card for more information

How you can mark safety and parking lines at walking speeds is explained in a folder published by H. C. Sweet Co. The Florline marking machine operates on gravity feed, is light weight, and has a line feeder feature for assuring straight lines. Specifications and prices are given.

Circle No. 218 on Reader Service Card for more information

The inside of the Towmotor fork truck is told in new literature offered by Towmotor Corp. The frame, power plant, travel mechanism, lift mechanism, and body are each discussed separately and in detail. Close-up photos, cut-away views and drawings let you in on exactly what makes the truck tick.

Circle No. 219 on Reader Service Card for more information

Swift-Floor floor resurfacing material is described in a new bulletin from The Monroe Co., Inc. It shows how the material is applied in three operations to resurface rough floors, and is ready for heavy-duty traffic 60 seconds later.

Circle No. 220 on Reader Service Card for more information

Two types of locomotive type crane trucks are described in bulletin 1613 issued by the Baker Industrial Truck Division of the Baker-Raulang Co. Model CXB has a rated capacity of 600 lb. at 7-ft. radius. Model CXF has a rated capacity of 10,000 lb. at 5½-radius. Cutaway photos of component parts make construction details easy to follow in the bulletin. Engineering specifications and action photos are also included.

Circle No. 221 on Reader Service Card for more information

The Pallet Roller, for fast loading and unloading of box cars, trailers and trucks is the subject of literature offered by Pallet Roller Co. The roller is designed to carry a complete pallet load to the farthestmost position in a carrier for stacking. For unloading, it rolls right into the vehicle to where the merchandise is stacked.

Circle No. 222 on Reader Service Card for more information

The Bin-Vue bin level indicator, made by Convair Corp. is the subject of catalog page recently printed. Explained is the device's simple design which is said to give positive, fool-proof signals under pressure or vacuum. The indicator can be used with any dry bulk material that flows.

Circle No. 223 on Reader Service Card for more information

Pneumatic wheels and casters, industrial wheels and casters, trucks, conveyor equipment, trailer leveling jacks and retractable casters are all thoroughly discussed in a 60 page catalog offered by Saginaw Products Corp. Engineering drawings, cut-away views, and photographs are used to describe all of the equipment covered.

Circle No. 224 on Reader Service Card for more information

"How Aluminum Can Save Tin" is the title of an information packed booklet offered by Reynolds Metals Co. It shows how more than 22 dry food products can be packaged in cartons and canisters that provide excellent resistance to moisture penetration. A table in the book compares costs and material used in packaging some 25 specific items.

Circle No. 225 on Reader Service Card for more information

Standard gravity and power units which are said to be time and cost savers are described in a 24-page bulletin published by Standard Conveyor Co. Many types of conveyors, conveyor sections and accessories are covered in the literature. Complete specifications are given.

Circle No. 226 on Reader Service Card for more information

Complete information on the Universal Power Booster and Stacker, manufactured by Industrial Engineering & Mfg. Co., Inc., is included in a four-page folder now being distributed. It presents complete specs on three models of the portable belt conveyor which is said to be ideal for loading, unloading, stacking, boosting, and horizontal conveying operations.

Circle No. 227 on Reader Service Card for more information

A complete line of industrial trucks, pallets, skids, conveyors and accessories is included in a price list published by A&A Machinery Corp. Capacities, specifications and prices are given in every case.

Circle No. 228 on Reader Service Card for more information

The Nutting Junior Catalog No. 52-G illustrates 63 different models of hand trucks plus several types of casters and wheels. It gives specifications, capacities and recommended uses in every case.

Circle No. 229 on Reader Service Card for more information

A light weight, durable, and easy handling pallet box is illustrated and described in a new folder published by the American Box Co. A number of photos and drawings show the box in actual use in several types of applications. Other types of boxes made by this company are also covered.

Circle No. 230 on Reader Service Card for more information

Cambridge Gripper Slings

STRONGER SAFER

for any lifting job!



STRONGER—because their spiral wire loop construction provides a wide bearing surface and greater gripping power around the load. In a basket hitch, shown here, you get the benefit of the Gripper Sling's maximum strength. A noose hitch gives greatest gripping power.

SAFER—because the Gripper Sling fabric will not break suddenly. Individual broken wires are not buried within a core, are immediately visible when broken. The sling may continue in use even after several wires are broken since the body of the sling absorbs the slack from individual breaks.

Investigate Gripper Slings today and see for yourself how they make any lifting job easier and safer. See your distributor or write direct for literature and technical data. Gripper Slings are sold through industrial supply, safety equipment and materials handling jobbers.



The Cambridge Wire Cloth Co.



Department W
Cambridge 3, Md.

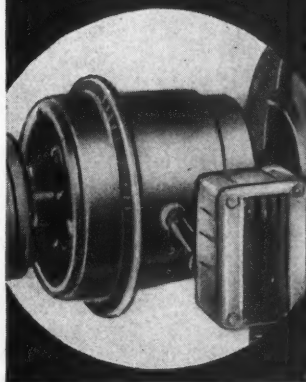
DISTRIBUTORS—ASK ABOUT VALUABLE TERRITORIES STILL OPEN!

Circle No. 68 on Reader Service Card for more information
FLOW • MARCH, 1952

POSITIVE Overload PROTECTION

ANCHOR- WALDRON

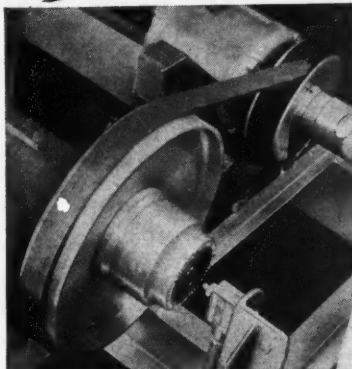
Torque- Sensitive Mechanical Control



COUPLINGS

for all direct drives

(Incorporates standard flexible coupling) Operating range 10 to 2,000 inch pounds.



PULLEYS for belt or chain drives

Operating range 20 to 10,000 inch pounds

● These automatic mechanical units make use of increasing torque to control the operation of machinery. They protect machinery from overload and reduce "down time" by eliminating sheared pins. They will also operate signals to give ample warning of build up in load.

Since 1938 many large industries have specified ANCHOR CUT-OUTS. A positive mechanical, electrical, and controlled overload cut-out device. Write for Catalog No. 51.

Also WALDRON Gear Type and Franke Pin Type Couplings. Catalogs on request.

JOHN WALDRON CORP.

NEW BRUNSWICK

NEW JERSEY

Sales Representatives in Principal Cities

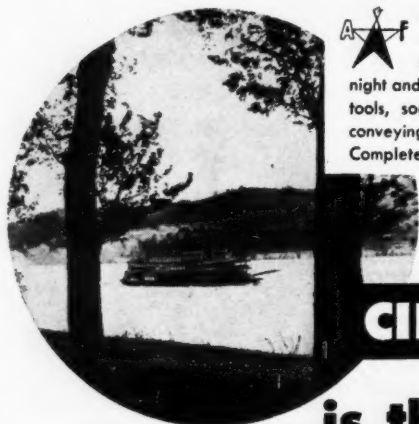
Circle No. 69 on Reader Service Card for more information

Complete, actual engineering data on pallets and palletization is incorporated in a pallet handbook-catalog published by the Acme Pallet Co., Inc. Some of the subjects covered include: "The engineering facts required prior to palletization," "How to choose the right pallets," and "Pallet maintenance." The 16-page book also contains illustrations and engineering data on all of Acme's pallets and industrial boxes.

Circle No. 231 on Reader Service Card

Lorain yard handling equipment for almost every possible use is shown in action in a booklet, "Lorains in Industry." It is offered by the Thew Shovel Co. A few of the uses include handling of castings, scrap, coke, pulpwood, sugar cane, steel tubing, and even the positioning of freight cars. Using the picture-caption technique, the booklet tells about each type of equipment shown, and how it is being used.

Circle No. 232 on Reader Service Card



Along the Ohio River's "Sycamore Shores" reigns quiet peacefulness. But just a mile or so away, industrial Cincinnati is working night and day to produce its world-famous machine tools, soap, pianos, radios, television sets and conveying systems — Alvey-Ferguson Engineered Completely Co-ordinated Conveying Systems.

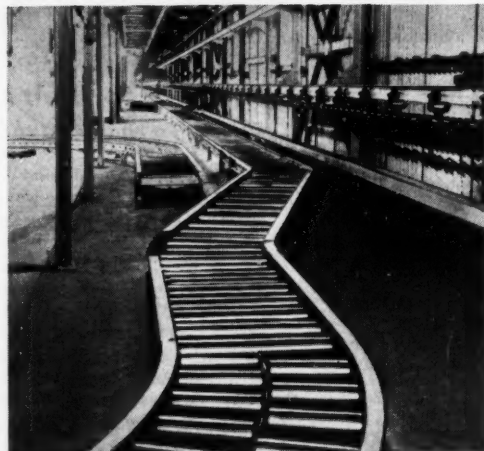
CINCINNATI

is the home of **ALVEY-FERGUSON**

where the world's best engineered
completely co-ordinated
CONVEYING SYSTEMS are made!



THE ORIGINAL
AND FIRST
IN THE FIELD OF
PACKAGE HANDLING
SINCE 1901



For a discussion of latest scientific handling methods write

THE ALVEY-FERGUSON COMPANY

434 Disney St.

REPRESENTATIVES IN PRINCIPAL CITIES

Cincinnati 9, Ohio

Circle No. 70 on Reader Service Card for more information

A 24-page catalog on Chester Hoists and trolleys is being distributed by the National Screw & Mfg. Co. An explanation of the spur geared hoist and the main features are given. Complete specs for both the hoists and trolleys are included.

Circle No. 233 on Reader Service Card

Motor Generator Corporation's complete line of Hobart automatic motor generator chargers for industrial trucks are described and illustrated in a new 6-page folder. The fundamental principles and theory of operation of the charging sets are explained. Illustrations show installations in various industries over the country.

Circle No. 234 on Reader Service Card

An explanation of how cylinder powered movements can simplify handling of materials is contained in literature offered by Hanna Engineering Works. Some of the suggested uses for this company's low pressure cylinders include opening and closing gates, hoppers, furnace and oven doors, and operating hoists, brakes and presses.

Circle No. 235 on Reader Service Card

Nuts, nails, bolts and similar small, heavy bulk packed items can be shipped in corrugated "keg boxes" according to a current booklet published by the Hinde & Dauch Paper Co. The booklet, "How To Ship Heavy Products In Corrugated Shipping Boxes," is number 12 in the company's Little Packaging Library series, and can be had free.

Circle No. 236 on Reader Service Card

Comprehensive information on the current models of Barrett single stroke hand lift trucks is contained in bulletin 5110 just released by Barrett-Cravens Co. The trucks have capacities up to 4000 lb., lifted with a single stroke of the handle. Complete specifications are given.

Circle No. 237 on Reader Service Card

Hydraulic elevating tables are described in a bulletin offered by Raymond Corp. The tables are offered in a range of capacities from 2000 lb. to 20,000 lb. in a variety of models and with various ranges of elevation. The bulletin shows models which can be used for die handling or work positioning and for strip and sheet feeding operations.

Circle No. 238 on Reader Service Card

A forty-page bulletin on flow meters has been published by the Bristol Co. of Waterbury, Conn. The bulletin, No. F1605, describes instruments for recording, integrating, indicating, automatic controlling, and telemetering the flow of steam, water, air, gas, oil, and other fluids.

Circle No. 239 on Reader Service Card

Do you have a problem in handling materials like underbody coatings, roofing materials, putty, caulking, sealers, paint or glue? A catalog released by the Alemite Division of Stewart-Warner Corp. tells about the Alemite Versatal material pumps. The booklet includes a selection chart which enables you to tell at a glance the type and size of pump adaptable to your product.

Circle No. 240 on Reader Service Card

Kerlow Steel Flooring Co. tells about its product in folder IQ-35 now being distributed. A development featured in the new literature permits the flooring, whether laid longitudinally or transversely to carry H20 loading on a 15" circle up to a span of 48 in. and weighs approximately 19 lb.

Circle No. 241 on Reader Service Card

The Camaloc for handling irregular shapes and lengths of rough, heavy material is described in a four-page folder of Camaloc Co. According to the literature, the sling attachment is completely automatic fastening and releasing. Principle of operation and specifications for four sizes is included.

Circle No. 242 on Reader Service Card

All stages of stitched canvas belt production are covered in a catalog released by the belting division of C. R. Daniels, Inc. A technical data sheet gives precise money-saving and time-saving information for the ordering, installing and operation and maintenance of Dandux stitched canvas belts.

Circle No. 243 on Reader Service Card

Softwood and hardwood pallets are the subjects of a four-page folder published by Sterling Lumber

& Supply Co. Six styles of pallets are illustrated. Details of construction such as nails and wood used and corner construction, are given.

Circle No. 244 on Reader Service Card

Bulletin No. 552 of Taylor-Wharton Iron and Steel Co. tells about that company's drag line bucket chains. Made of manganese steel, the chains are said to be extremely durable. Specifications for eight sizes of chains are given.

Circle No. 245 on Reader Service Card

No More Barrel House Blues



when you use AMERICAN Drum and Barrel Cradles!

Handling drums and barrels is a "cinch" when you have American Drum and Barrel Cradles on the job.

The Disappearing Patented Loading Bar, an exclusive American feature, makes loading the heaviest drums and barrels safe and easy for one man. All steel construction adds years of life . . . gives the strength that eliminates costly accidents. Red enamel finish stands up in hard usage, stays bright and clean.

American Drum and Barrel Cradles are available 18" or 24" high, with or without wheels. Get complete information. Clip and mail coupon now.

Savings, too!

Another exclusive American feature permits shipping semi-knocked-down. Save in shipping costs and warehouse space.



Materials Handling by

AMERICAN PULLEY COMPANY

Complete Line of Pressed-Steel Hand Trucks, and Steelite® Industrial Wheels

Circle No. 71 on Reader Service Card for more information

THE AMERICAN PULLEY COMPANY
4290 Wissahickon Ave., Philadelphia 29, Pa.

Gentlemen:

Please send me your bulletin on American Drum and Barrel Cradles. ☐ I am also interested in Hand Trucks.

Name _____

Firm Name _____

Address _____

City _____ Zone _____ State _____

Manhattan Single Groove V-Belts are described in a bulletin issued by Raybestos-Manhattan, Inc., Manhattan Rubber Division. New standardized belt numbers and a list of standard sizes are included in the bulletin.

Circle No. 246 on Reader Service Card

The Chain Belt Co. offers you a pocket size booklet on the installation, operation, and maintenance of chain drives and conveyors. Used

properly, the book should be able to help increase plant and machine efficiency and lead to important savings both in time and money.

Circle No. 247 on Reader Service Card

Speed in addressing is the subject of a broadside offered by Elliot Addressing Machine Co. Sections of the literature discuss machines for hand and automatic feed addressing. Photographs illustrate uses in several different industries.

Circle No. 248 on Reader Service Card

An all-purpose fork lift truck for heavy duty industrial use is described by Tracto-Lift Co. in a new eight-page bulletin. A large number of the Tracto-Lift's many uses from carrying of lumber to handling of one-ton loads of scrap are illustrated. Also included are complete specifications for four models with capacities of 3000 lb., 4000 lb., 5000 lb., and 6000 lb. respectively.

Circle No. 249 on Reader Service Card

Savings which are said to be possible with Youngstown containers are set forth in literature available from Youngstown Steel Door Co. Two types of containers are listed: the drop bottom type for complete and quick discharge of bulk materials, and the controlled discharge container for partial discharge of bulk materials.

Circle No. 251 on Reader Service Card

Have you seen a copy of the Stephens-Adamson Mfg. Co.'s external house organ, "The Conveyor"? Free to material handling engineers and users of conveying, elevating, screening and transmission equipment, it contains articles about companies which had material handling problems and solved them. You can profit by being on the mailing list for this publication.

Circle No. 252 on Reader Service Card

The Alexander elevator sill, a device which operates like a draw-bridge over the gap between elevators and building floors, is illustrated in a circular of Alexander Sill Co. The sill is said to provide safe, smooth surface for truck entering or leaving elevators, and to protect elevator, doors, floors and merchandise.

Circle No. 253 on Reader Service Card

The Shop Caddy "Knocks the load out of lifting and lowering goods" says a new bulletin published by Grand Specialties Co. The hydraulic pallet-lift stacker hand truck is shown in several uses in the booklet. Complete specifications are also given.

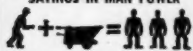
Circle No. 254 on Reader Service Card

This load of metal coils is an example of the many bulk handling jobs around a plant that can be done easier, faster and at less cost by one man and a Prime-Mover. Ten cubic foot bucket and large platform are quickly interchangeable.

**THIS IS ONE PLACE
IN YOUR PLANT
FOR PRIME-MOVER**



SAVINGS IN MAN POWER



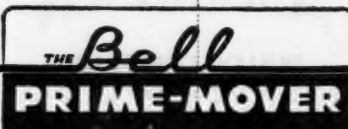
Fills a real need in bulk-materials handling!

Wherever there is scrap, cuttings, filings, and other clean up jobs, Prime-Mover has the capacity and power to save the time of at least three men.

A quick change (2 minutes) from bucket to platform greatly increases the usefulness of this versatile machine. A bonus fea-

ture is the new and improved scraper blade attachment for snow removal.

Dependable 5 H.P. Wisconsin engine provides ample power, forward and reverse, to take 20% grades easily, with 1500 pound load. For name of distributor and complete data, write to us.



Circle No. 72 on Reader Service Card for more information

Bulletin No. 11 of Standard Conveyor Co. tells you how to send messages, cash, and orders to remote departments with pneumatic tube systems. Three case studies are included to show how others have saved money through installations in their plants. Photographs show different types of installations.

Circle No. 255 on Reader Service Card

Hydraulic attachments which permit lift trucks to lift almost any kind of load are shown by Liftall Corp. in a leaflet now being offered. Called "Griplift" attachments, they lift loads by a grip action which is said to assure safe handling with reduced damage to containers and products. Several photos show the attachments in actual use in different types of industries.

Circle No. 256 on Reader Service Card

A material handling analysis guide offered by Automatic Transportation Co. tells you how to get quick relief from the squeeze between rising production costs and tightening price controls. Costly leaks in your pocket book are revealed, and methods of closing them are given. Photographs show Automatic trucks being used in different instances to save time and expense.

Circle No. 257 on Reader Service Card

Teleflex mechanical remote controls are described in catalog 900 of Teleflex Inc. Motion is transmitted from one point to another by movement of flexible cable within a conduit. Illustrated is an installation to position switch gates on chutes. Other uses are suggested.

Circle No. 258 on Reader Service Card

Their complete line of hand trucks, platform trucks, barrel trucks, skids, dollies and rubber-tired and steel wheels are shown off in a new catalog released by Modern Equipment Company, Inc. All technical specs are shown, to make selection easy.

Circle No. 259 on Reader Service Card

You can get complete specifications on the Scoot-Crete, a powered barrow which is said to be an economical and efficient way to handle bulk materials. High maneuverability is achieved through cast-er steering, and good traction is a result of large heavy-duty tires. The specifications also show a flat rack which can be mounted in place of the standard body. This permits handling of material like bricks, blocks, etc. Manufacturer: Getman Bros.

Circle No. 260 on Reader Service Card

Messages printed right on the tape you use to seal your cartons can save you from doing many unnecessary operations according to literature available from Better Packages, Inc. That company's CodeTaper marks your tape as it dispenses it. Any message such as unpacking instructions, handling instructions, and packers numbers can be printed with this dispenser. Type can be changed quickly according to the literature.

Circle No. 261 on Reader Service Card



Cesco Tote Boxes

...Cut Handling Costs

...Make Handling Easier



SPECIAL CESCO FEATURES

- Lightweight
- Self-Stacking
- Quieter Handling

... ruggedly constructed of hardwoods ... steel reinforced (specially coated steel to prevent rust) ... riveted for maximum rigidity.

An added Cesco feature ...

CESCOAT

A new wood preserving process ... waterproofs ... grease-proofs ... is acid resistant

OTHER CESCO PRODUCTS

- Wire Baskets
- Tote Trays
- Special Pallets



CESCO'S 3 STANDARD BOXES

(Prices Net)

Lots of	No. 1	No. 2	No. 3
2000	\$1.80	\$2.05	\$2.20
1000-1999	1.82	2.07	2.22
500-999	1.84	2.09	2.24
250-499	1.89	2.14	2.29
100-249	1.94	2.19	2.34
No. 1 size — (I.D.) — 14 $\frac{1}{2}$ " x 11 $\frac{3}{4}$ " x 9"			
No. 2 size — (I.D.) — 18" x 11 $\frac{3}{4}$ " x 9"			
No. 3 size — (I.D.) — 20" x 11 $\frac{3}{4}$ " x 9"			



WRITE TODAY FOR FURTHER INFORMATION

CESCO CONTAINER CO.

General Offices: 475 Fifth Ave., New York 17, N.Y. • Phone MU. 5-4961

Factory: Northampton, Mass.

Circle No. 73 on Reader Service Card for more information

Here Are More Films Available on Conveyors . . . see Jan. issue for complete list.

"The Way Over The Mountain"
16mm

Shingle & Gibb Co.
Philadelphia, Pa.

"Conveyor Design & Application"
16mm

The Bosworth Manufacturing Co.
Cleveland, Ohio

"Conveyors That Pay Dividends"

16mm, 30 minutes, sound, black and white. Many conveyor installations featuring several types of conveyors.

Lamson Corporation
Lamson Street
Syracuse 1, New York

"Barber Greeses In Action"
16mm

"Permanent Belt Conveyors" 36 minutes
"Coal Handling Machines" 36 minutes
"Portable Conveyors" 12 minutes
"Bucket Loaders" 16 minutes

The above four all 16mm, silent kodachrome movies.

"Highways U.S.A."

A series of three dimensional colored scenic shots taken all over the United States with sound. Running time is about 45 minutes. It is an expensive show and requires special equipment, including a special screen. Arrangements can be made to show it only by a Barber-Greene Operator.

Barber-Greene Company
Aurora, Illinois

"Golden Valley"

20 minutes, 16mm, sound. Conveyor built used in construction of Shasta Dam.

"Modern Coal Mining"

20 minutes, 16mm, sound, black and white. Labor saving machinery, electrically driven, has replaced the coal mining methods used for hundreds of years.

Motion Picture Dept.
Goodyear Tire & Rubber Co.
Los Angeles, California or
Akron 16, Ohio

"Heavy Media Coal Cleaning Process"

16mm, 15 minutes, sound, color. Describes the heavy-media process of separating refuse from coal, and features the Link-Belt Float Sink Concentrator and allied equipment.

"Handling Materials in the Steel Industry"

16mm, 30 minutes, sound, color. Shows the equipment used in handling of steel coils through the various processing operations to final shipment.

Link-Belt Company
Public Relations Dept.
307 N. Michigan Avenue
Chicago 1, Illinois

"Manufacturing Anchor Chain"
"Bombs by Mass Production"

Both 16mm, sound films in black and white, 20 minutes. Shows material handling processes carried to the nth degree in war production work.

Mechanical Handling Systems,
Inc.
4600 Nancy Avenue
Detroit 12, Michigan

"Automatic Pallet Loader"

16mm, 15 minutes, sound, black and white. Shows complete operation of automatic pallet loader in several plants.

THE TURNER SYSTEM OF MATERIALS HANDLING

CUTS COSTS



SAVE
up to
50%

- Labor
- Space
- Equipment

A. Stacking Pallet with Floor Plate Deck (3 types available).
B. Transport (5 types) carries loads with or without Bin Sections. Moved by Jimmy or lift truck.



Deliver the Bin and Save the Handling"

- Pallets
- Transports
- Die Racks
- Shelf Racks
- Super-Structures

Send for this Free Book
Gives the complete story on amazing Turner System.

Dies on this Rack fully protected, instantly accessible, quickly moved to job.



FACTORY SERVICE COMPANY

4607 N. TWENTY-FIRST STREET MILWAUKEE 9, WISCONSIN

Circle No. 74 on Reader Service Card for more information

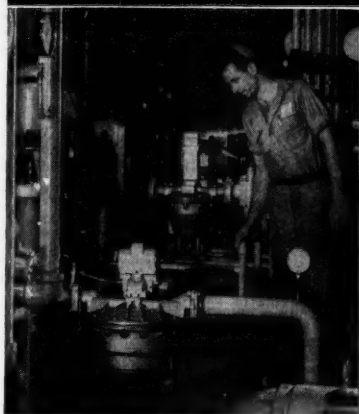
Wayne University Gets \$5000 Check Toward Material Management Center



Shown at right is Robert Evans, vice president of Evans Products Co., presenting Wayne University President, David D. Henry, a check for \$5000 as a kickoff of a drive to establish a Material Management Research and Training Center at

the Detroit school. It is estimated that \$75,000 a year, or a total of \$375,000 will be needed to adequately finance the project through a development period of five years. Other prominent leaders of industry who were present also offered financial support for the project. The educational program will include courses on time study, fundamentals of material handling, loading, warehousing, package design and construction, standardization of methods and equipment for handling, and many others. Dr. Spencer A. Larson is to be appointed full time director of the Center as soon as the University can release him from his present duties as Professor and Chairman of the Department of Marketing and General Business.

XACTO... The Meter That CHANGED Liquid Handling Habits!



For over a quarter century Xacto meters have brought to industry after industry an entirely new and effective way to measure liquids... accurately.

Xactos accurately measure and safely handle more than 662 different liquids in processing, blending, packaging and many other operations. And it's done with a degree of economy never thought possible!

YOU JUST PUSH A BUTTON OR OPEN A VALVE!

Bowser Xacto meters have reduced the distribution and processing of liquids to the simple operation of pushing a button or opening a valve. For checking incoming deliveries, transferring, batching or recording consumption... for any liquid meas-

uring job... there's no substitute for Bowser Xacto meters! Available with straight reading, pre-determining or ticket printing dials... and in sizes for any need!

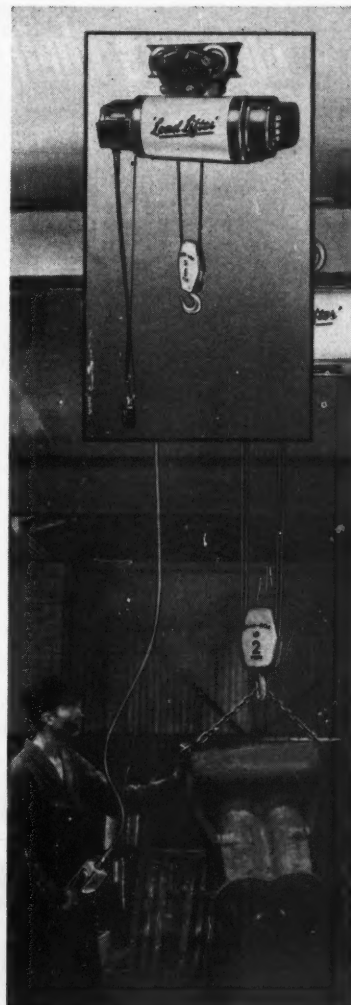
Write for the facts on Bowser money-saving meters.



BOWSER, INC. 1380 Creighton Ave., Fort Wayne 2, Ind.

Regional Offices • Atlanta • Chicago • Cleveland • Dallas
Kansas City • Los Angeles • New York • San Francisco
Washington, D. C. • Hamilton, Ont.

Circle No. 75 on Reader Service Card for more information



TOUGH HOIST FOR TOUGH JOBS

The "Series 700" 'Load Lifter' Electric Hoist reduces heavy-duty lifting to little more than the push of a button. It's fast—can hoist a 1000-lb load a foot a second.

Steel suspension, heat-treated helical gears, powerful synchronized load and motor brakes, 24 volts at the push button—all contribute to the stamina, safety and dependable performance of the 'Load Lifter'. Let it help you meet your defense production goals, economically. Write us for Bulletin 399.



'Load Lifter'

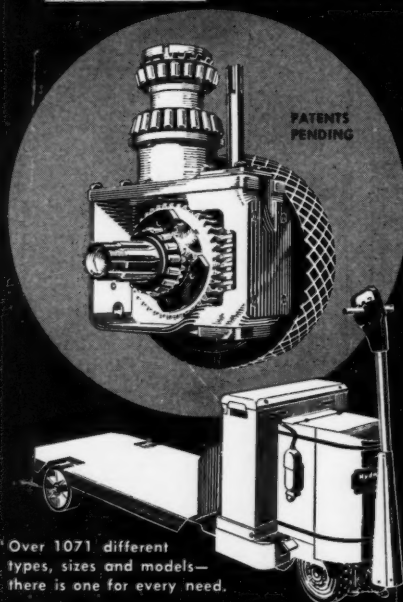
HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" Cranes, "Budgit" and "Load Lifter" Hoists and other lifting specialties. Makers of "Ashcroft" Gauges, "Hancock" Valves, "Consolidated" Safety and Relief Valves, "American" Industrial Instruments.

Circle No. 76 on Reader Service Card

outwears chain drives 10 to 1



PATENTS
PENDING

This sealed gear drive guarantees much longer life for the Hydroelectric. Requires little maintenance . . . and only minimum attention. The sealed Gear Drive in the Hydroelectric Lift Truck is Stuebing engineered to give maximum service life without fuss or bother. This exclusive feature eliminates the main cause of excessive repairs and costly down-time in truck operation. All gears and running parts are sealed in lubricant. It is the widely accepted automotive type differential gear drive.

Over 1071 different types, sizes and models—there is one for every need.



LIFT TRUCKS
INCORPORATED

2423-31 SPRING GROVE AVE.
CINCINNATI 14, OHIO

Move The World On Pallets



Why be satisfied with less than the best pallets, collapsible boxes and cratings when the best costs no more? **OZARK MASTER** pallets and boxes are still giving continuous service after 5 or more years of hard usage by some of the largest companies in the U.S. and Canada. If you are not now using **OZARK MASTER** pallets, can you say this for the pallets you are using?

Five factories to serve you. Samples furnished upon request. Write, wire or call us for quotations and delivery schedules. Over 2,000,000 pallets experience.

SELECT TERRITORIES ARE AVAILABLE TO PROGRESSIVE DEALERS AND DISTRIBUTORS. YOUR INQUIRIES ARE INVITED.

SUPREME MANUFACTURING CO.

BERGMAN, ARKANSAS

Circle No. 79 on Reader Service Card for more information

LIQUID HANDLING . . .

(Continued from page 81)

Packaging and Shipping of Liquids

From mixing tanks, liquids can be fed either to packaging departments, direct to outgoing tank cars or highway trucks, or to storage tanks.

It is not necessary to maintain on-the-spot storage locations for liquids at the point of packaging, if an automatic pipe line system is used. As indicated earlier, storage may, in fact, be in another building or in outside storage tanks hundreds of yards away.

When needed for packaging, a valve is opened, and the liquid automatically measured into open-top cans, for instance, as they move down a conveyor line. Such installations are as convenient as a water faucet, only the amount of liquid fed each time can be pre-set.

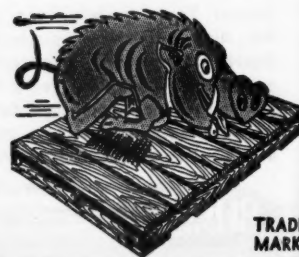
In filling drums, several individual steps can be saved if filling is meter-controlled. For example, one

Smart Buyers Get Razorback Pallets

. . . yes, they are insisting on pallets giving long service with low maintenance cost . . . which is why there are more **RAZORBACK** Brand Pallets in use than any other brand! Our rounded-corner feature is the most important improvement in years! Contact us or our representatives.

Arkansas Pallet Co.

P. O. Box 794-A Phone 6474
PINE BLUFF, ARKANSAS



TRADE
MARK

Circle No. 78 on Reader Service Card
MARCH, 1952 • FLOW

firm used to require six steps in its drum filling operations:

1. weigh the drum for tare weight
2. stencil the tare weight on the drum
3. fill the drum with the liquid
4. weigh the drum for gross weight
5. compute and stencil the net weight
6. compute and stencil gallons

With a meter-controlled feed, these steps were halved, as follows:

1. fill drum (number of gallons can be read on meter)
2. stencil gallons on drum
3. weigh loaded drum for gross weight

Automatic filling equipment can be regulated to fill a pint can or a 100-gallon container. And for this type of filling, start and stop of feeding system can be set automatically; this eliminates excess time on the part of operators while regulating the system and waste through drippage. Accurate filling of drums at a rate of one a minute or faster is not uncommon.

Another application of liquid handling equipment is in the disposal of waste or by-products. By-products of a processing operation can be shunted to storage, direct to outgoing carriers or to some central disposal area. When waste water is a by-product of a processing operation, and it cannot be piped directly into streams, lakes, etc., it may be first filtered—automatically.

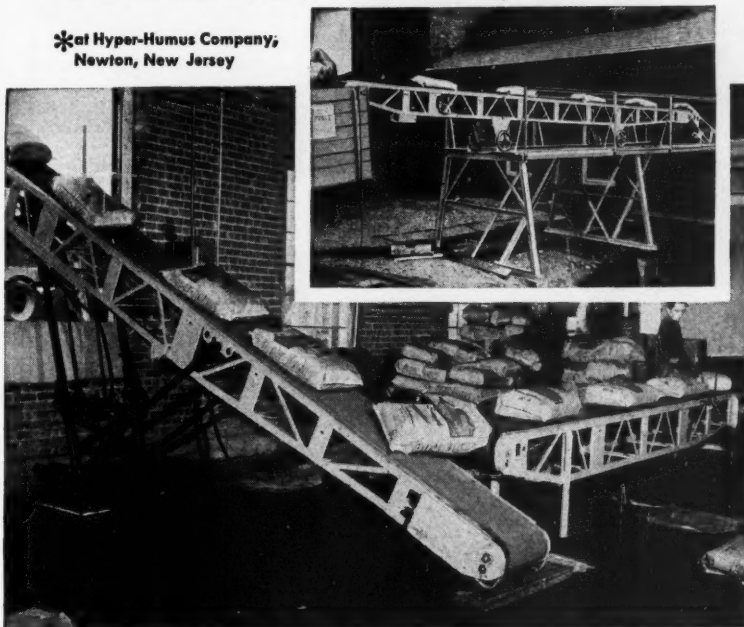
These are only a few of the uses for liquid handling equipment. Whether it be for handling liquids during receiving, storage, processing, packing or shipping, this equipment can give you tremendous savings in time, physical effort and assure you of controlled uniformity of proportions.

(FLOW wishes to thank Mr. I. D. Bone, Bowser, Inc., for his exceptional help in the preparation of this article. Be sure to see the January article on liquid handling equipment in the metal working field.)

One in a series of factual reports from owners of Farquhar Conveyors

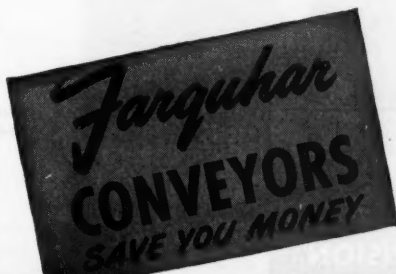
FARQUHAR CONVEYORS LOAD WITH 75% SAVINGS IN LABOR*

*at Hyper-Humus Company,
Newton, New Jersey



BEFORE the Hyper-Humus Company installed Farquhar Conveyors, seven to ten men were required to carry bags to trucks. Serious installation problems had to be solved by Farquhar engineers, but now loading is accomplished with three men . . . *one-third faster* than before. As a result, Hyper-Humus writes: "Any person with a handling problem should definitely contact Farquhar's Engineering Department!"

Whether you move coal, gravel, sand, aggregates, cartons, boxes, bundles, bales, or any kind of bulk or packaged materials—horizontally or from floor to floor—Farquhar can cut *your* handling costs to rock bottom! One or more of the complete line of Farquhar portable, semi-permanent and permanent conveyors will solve your handling problem. Our engineers will be glad to consult with you . . . at no obligation.



WRITE for complete information to
A. B. FARQUHAR CO., Conveyor Div.,
Dept. F-06, 142 N. Duke St., York, Pa.
or 618 W. Elm St., Chicago 10, Ill.

**WORLD'S MOST COMPLETE
CONVEYOR LINE**

HYDRAULIC PRESSES • FARM EQUIPMENT • FOOD PROCESSING AND SPECIAL MACHINERY

Circle No. 80 on Reader Service Card for more information



Brainard
SHARON STEEL
STEEL DIVISION
SHARON STEEL CORPORATION

WARREN, OHIO

Why does Jack use the back door?

BRAINARD STRAPPING TOOLS, like the one husky Jack Griffin of Rochester and Syracuse carries here in his left hand, are often worth their weight in gold to some strapping user to keep production rolling.

On rush occasions like this, Jack gives the order personal delivery—right on through the shipping room door. Once there, he sticks with it until things are running smoothly.

Jack used to play a lot of football at Niagara University, got in the habit of tackling problems head on. Locating a replacement tool for a customer in a jam, giving personal follow-through, bringing out factory experts for technical advice don't rate as unusual in the eyes of Jack Griffin and his fellow Brainard Strapping System representatives.

To them it means service. To you it means dependability. Brainard representatives are located throughout the U.S.; in Canada, P. J. McArthur Company, Toronto.



COMPLETE STEEL STRAPPING SERVICE, LIGHT AND HEAVY DUTY STRAPPING, TOOLS AND ACCESSORIES

For new catalog on Brainard Strapping System write Brainard Steel Division, Dept. K-3, Griswold Street, Warren, Ohio.

PACKAGING and SHIPPING SECTION

What Kind of
Shipping Container 110
Carloading Patterns: 120

What's New in Packaging and Shipping Equipment?

Label Addresser and Marker— *Weber Addressing Machine Co.*

Here's a machine that will print and address shipping labels, or print and mark identification labels, in one operation from a roll of plain gummed or ungummed label stock. The machine is adjustable to print and cut off labels from a minimum size of $\frac{7}{8}$ in. by 2 in. to a maximum size of $3\frac{1}{4}$ in. by 6 in. Label stock is fed through the machine and 100 printed labels are turned out per minute. The machine is available in manual or electric models. Weight is 22 lbs., and overall size is 9 in. by 20 in. by 11 in.



Write 262 on Reader Service Card

Gravity Filling Machine— *MRM Company, Inc.*

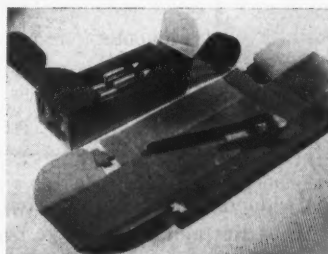
A gravity feed tank that is adjustable for height is incorporated in this filling machine, which is also equipped with a 10-ft. motor-driven conveyor. The tank is controlled with its own individual float control mechanism. Because the height of the tank is adjustable, the machine can fill foamy materials and other

sensitive matter. Another feature is the spout, which is made of only two sleeves to eliminate contamination. Containers from fractional ounces to two-gallons may be handled in glass or metal, and models of 6, 8, 10 and 12 spouts are available. Dimensions of the machine are: approximately 12 ft. long, 6 ft. $\frac{1}{2}$ in. high, and 2 ft. 10 in. wide.

Write 263 on Reader Service Card

Low-Cost Corrugated Box— *The Hinde & Dauch Paper Co.*

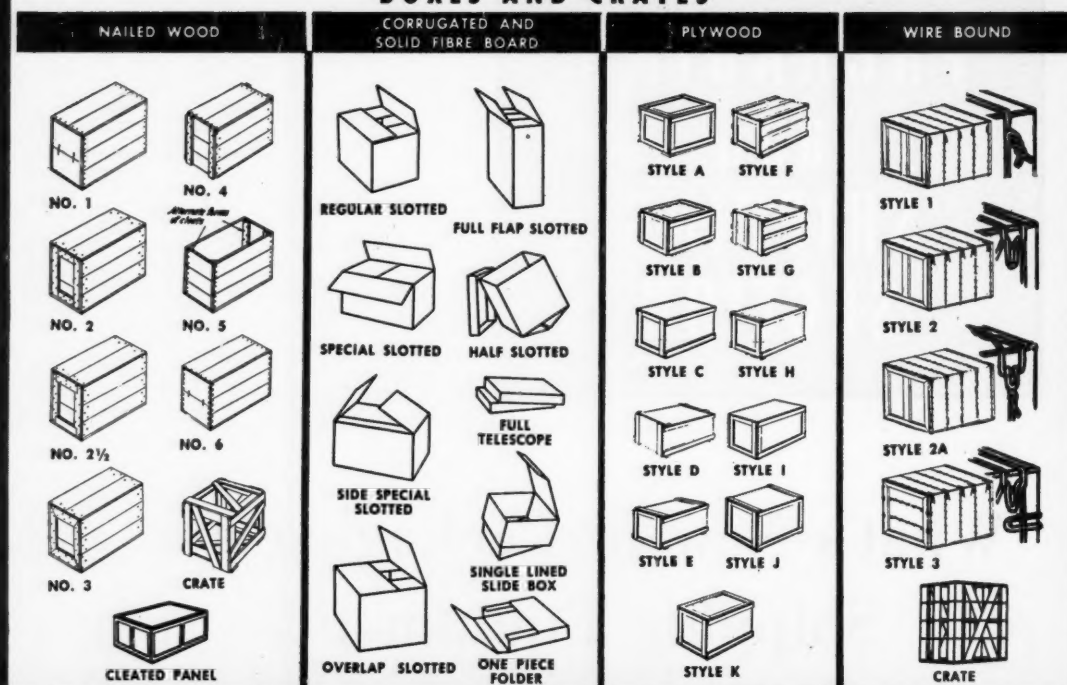
Here's a one-piece corrugated box that not only protects the product in shipment but identifies it quickly on the dealer's shelf. This die-cut box was made to accommodate six pipe wrenches, and is said to have saved the wrench manufacturer 40 per cent on box costs and 80 per cent in packing labor. It is simple to set up, and can be removed from shelves without the hazard of the wrenches falling out. Name, model and quantity are displayed on the ends of the boxes for easy identification.



Write 264 on Reader Service Card

SOME BASIC TYPES OF SHIPPING

BOXES AND CRATES



What Kind of Sh

About this Survey . . .

















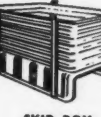






On these pages, mention is made of more than 50 different types of containers all designed to give cold cash savings in the shipment of almost any type of product. Accompanying photographs show ways in which many of these containers are being put to use today by manufacturers. If you feel that your shipping methods are not answering all your problems, and if you are looking for new solutions it will pay you to study the pictures carefully. One of the methods shown, with a few modifications, may be just what you are looking for.

A wide variety of shipping containers such as boxes, bags, barrels and drums have been developed to suit almost every product. The savings in time and the reduction of damage costs which the right one can give you make it worth your while to give all containers careful consideration before deciding on the type for your product.

FLOW presents herewith a cross-section of the basic

types of shipping containers which you can buy. As a cross-section, it only scratches the surface of the overall picture. It is generally agreed, however, that all shipping containers are relatives of one or more of those shown in the above chart. In fact, an overwhelming majority of the ones in use today are versions of the general types shown, modified for the particular product they will carry

CONTAINERS BEING USED TODAY

BAGS		BARRELS	COLLAPSIBLE CONTAINERS	METAL CONTAINERS	FIBRE DRUMS
COTTON	PAPER (MULTI WALL)				
					
SEAMLESS	A	SLACK BARREL	STEEL	DRUM	ALL FIBRE SLIP ON COVER
					
STANDARD (WITH SIDE SEAM)	B	TIGHT BARREL	WIRE	SOLID BOX	FIBRE COVER METAL BOTTOM
					
OPEN MESH	C	BEER BARREL	WOOD	SKID BOX	METAL TOP AND BOTTOM
					
	D		WIRE HINGED CRATE		RECESSED ENDS
					
	E				MULTI SIDED STEEL STRAP BOUND

of Shipping Container?

Boxes and Crates

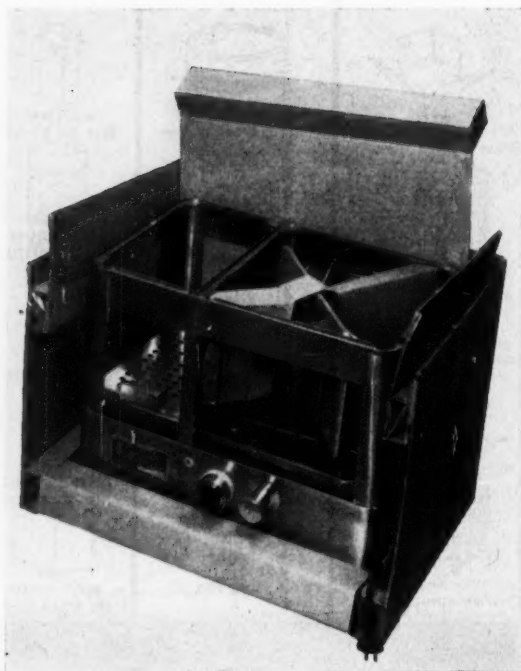
In general, there are five types from which all those now in use stem. They are nailed wood, corrugated or fibreboard, plywood, wirebound and cleated panel.

Nailed wood boxes or crates can be had to ship your smallest product, which may weigh only a few pounds, or your largest, which may weigh hundreds of pounds. The more simple the container, the less expensive it is, of course, but on the other hand, its simplicity may sometimes cause it to lack sufficient strength. An example is the nailed wood box designated as Type No. 1 in the chart accompanying this report. When shipping conditions are such that the container is not likely to suffer rough handling and the product is not apt to be easily damaged, this box probably will suffice. Its ends are made of single thicknesses of lumber and the sides, bottom and top are nailed directly to them. The danger of splitting the end boards is increased with this type as shipping conditions become more severe.

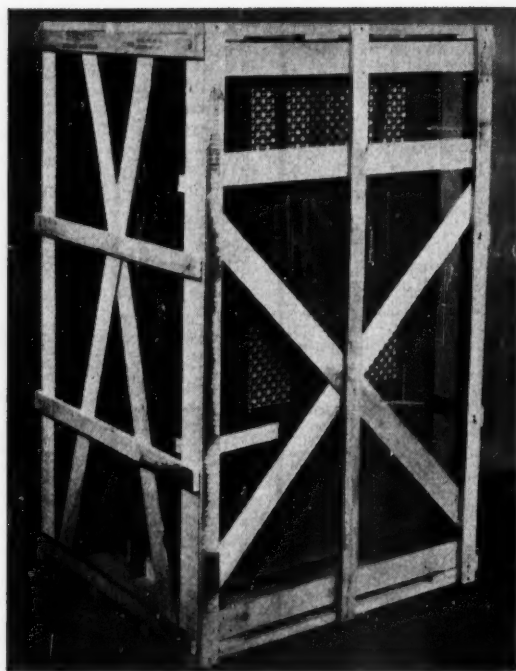
Note that the main differences in the first seven styles of nailed wood boxes shown lie in the construction of the ends. In planning which to use, it is necessary to decide whether the increasing cost or increasing strength is of most importance to you and your product. Styles 2, 2½, 3 and 4 give added strength through addition of cleats and variations in the construction of ends. Style 5 gives an added advantage of space savings by putting cleats inside the box. These cleats might be rectangular or triangular in shape depending on restrictions created by the shape of the product which will be enclosed. The Style 6 box with its lock-corner construction gives the same space saving advantages of No. 5, plus greater strength, and tightness to prevent sifting of fine-grained bulk products.

When rigidity, light weight and dust proof qual-

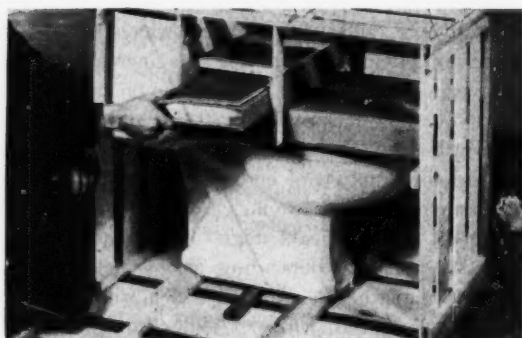
**On The Following Pages Are
Photos And Details Of Various Containers . . .
Story Continues On Page 122**



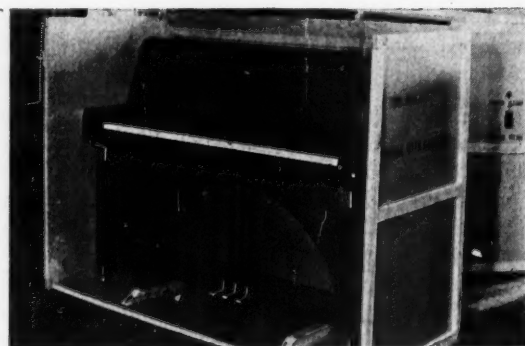
SPECIALLY DESIGNED CORRUGATED CARTON with interior dividers (shown here in cut-away view) is used for shipping hot dog steamer. Units are packed at the end of the assembly line, reducing handling expenses. Packing time is short and the high polish finish of the steamer is protected.



CORNER HINGED CRATE contains a 400 lb. cast iron heater. This type container comes to shipper in three sections; bottom, top, and collapsible side walls held together at corners with wire hinges, and is shipped flat when empty. For assembly, nails are driven through side walls into top and bottom.

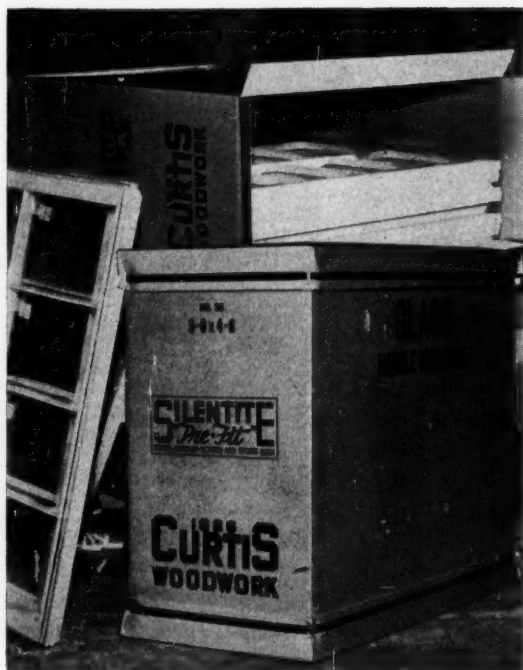


WIREBOUND CRATE was designed to protect the easily damaged surface of sanitary ware. Ingenious placing of braces serves to prevent movement of contents, provides compartments for seat and water closet cover. Crate has been wrapped around contents and ends.



CLEATED PANEL BOX is equipped with two skids on inside bottom, to hold this small piano. Instrument is bolted to two equally spaced vertical cleats on the back of the container. Adequate protection is provided at all other points by allowing space between the piano and the box.

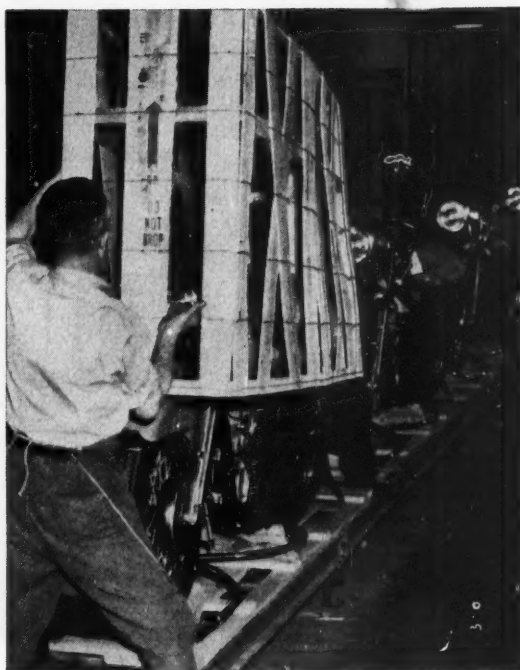
Are 8 Proven Answers



MULTI-SIDED CORRUGATED CONTAINERS can be used to ship a variety of products. Octagonal, hexagonal, rectangular, or square, they are stored flat. Flaps on top and bottom double under similar flaps on body to make a joint which cannot be pulled apart after strapping.



CYLINDRICAL CORRUGATED CONTAINER can be used in this fashion for shipping items like this fragile television camera tube. Many layers of corrugated material plus a bedding of soft cushioning wadding bring the tubes safely through trips which may include otherwise damaging shocks, jars and vibrations.



WIREBOUND CRATES are slipped over Harley-Davidson motorcycles and nailed to crate base to which the machine has already been attached. Method speeds packing room operations and makes unpacking quick and easy for dealers. Interior bracing prevents shifting or rolling.



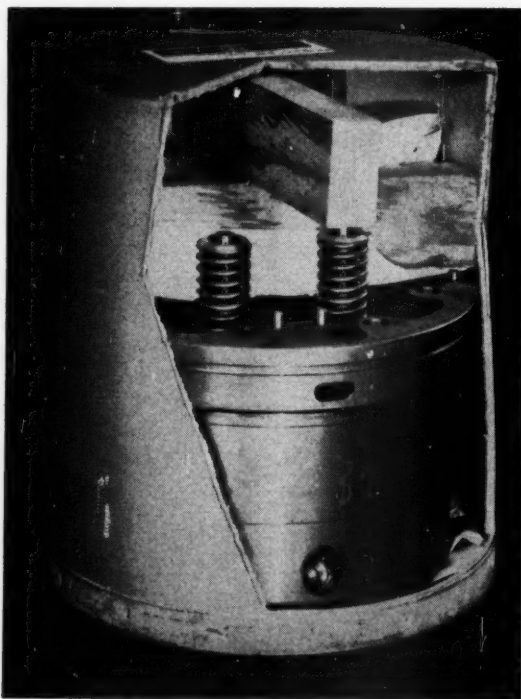
WATERPROOF CORRUGATED WALLS of this container help to protect whole blood on its way to Korea. Container is double walled with phenolic foam insulation which adds to structural rigidity. Recipient sets, including hose and 24 hypodermic needles for transfusions are packed in the small corrugated box.

What Kind of Containers? . . .

Here are 4 More Answers



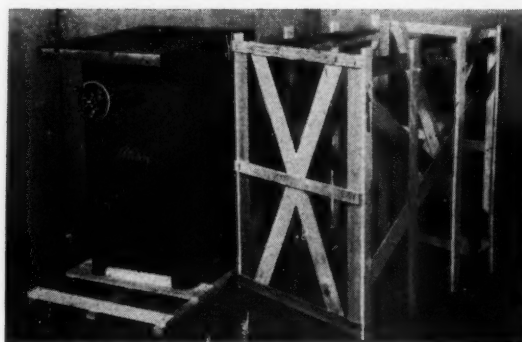
PALLETIZED WIREBOUND CRATES can be handled easily with fork trucks. They can be stacked to save space in vehicles, on shipping and receiving docks, or in store rooms. Much handling can be eliminated by cutting out sides for access in the store room of the receiving company.



SMALL FIBRE DRUMS can be specially designed for use in shipping a variety of automotive parts or other odd shaped items. Wood blocking or other types of bracing provides an effective and speedily installed method of protection against moving and shock.



FOUR-PIECE WIREBOUND BOX is quickly wrapped around well-drilling bits at W. C. Smith Co. Each bit weighs about 150 lb., presenting problems in getting a container strong enough, compact enough and easy enough to pack. Assembled in one minute, this box is doing the job.



COLLAPSIBLE CRATE slips over this power saw and is nailed to the base for shipping. The top panel is also nailed in place. Wire hinges of the crate permit it to be folded flat for storage. Only support necessary for the saw is to anchor it at the base as shown.

STENCIL MARKING

Delivers The Goods!



Three size machines . . .
cut 1/2", 3/4", 1" stencils.



MARSH K-1 BLACK STENCIL INK

No shaking needed. Blacker marks. Weatherproof. Fast drying. Write for FREE pint sample and try it.



MARSH FOUNTAIN BRUSH

"Push Button" fingertip control assures neat, attractive marking on your shipments.



MARSH OIL BOARD

Cuts clean, perfect stencils. Stencils last for 3000 markings.



THREE SIZE
MACHINES, CUT
1/2", 3/4", 1" STENCILS

Marsh Stencil Machines
meet Federal
specifications
GG-M-91

Yes . . . your goods reach home to the customer, faster, safer. Stencil marked addresses are neat, legible, permanent . . . correctly read by hurried freight handlers. Stencil marking is easy . . . lay a cut stencil on the shipment, a few brush strokes, and its ADDRESSED. No other method of addressing gives you ALL these advantages.

No other stencil machine gives you the Word Space Button, Hardened Dies and Quick Replaceable Punches, Streamlined Hood, Sealed-In Lubrication, and other superior features.

Your orders shipped immediately from dealer's stock in principal cities. Or write for free Handbook.



MARSH STENCIL MACHINE COMPANY, 67 MARSH BLDG., BELLEVILLE, ILL., U. S. A.

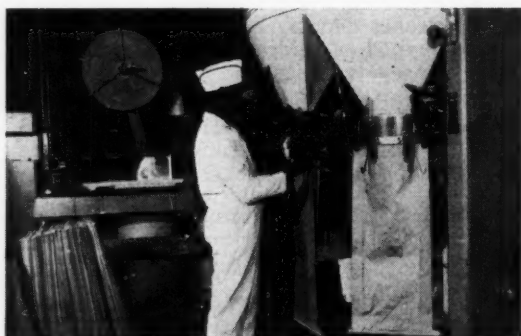
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PACKAGING AND SHIPPING SECTION



PAPER AND TEXTILE SHIPPING BAGS AND SACKS are used today for shipping bulk products from fine granular material like flour to small metal parts, like nuts and bolts. In many cases, when filled, they can be stacked to completely utilize space of storage areas as illustrated above. This same advantage holds true in loading vehicles. Note the interlocking method of stacking used to bind together the enormous pile illustrated. Another method of handling bags is to palletize them and move them about with fork trucks. Interlocking stacking is also used in that method.

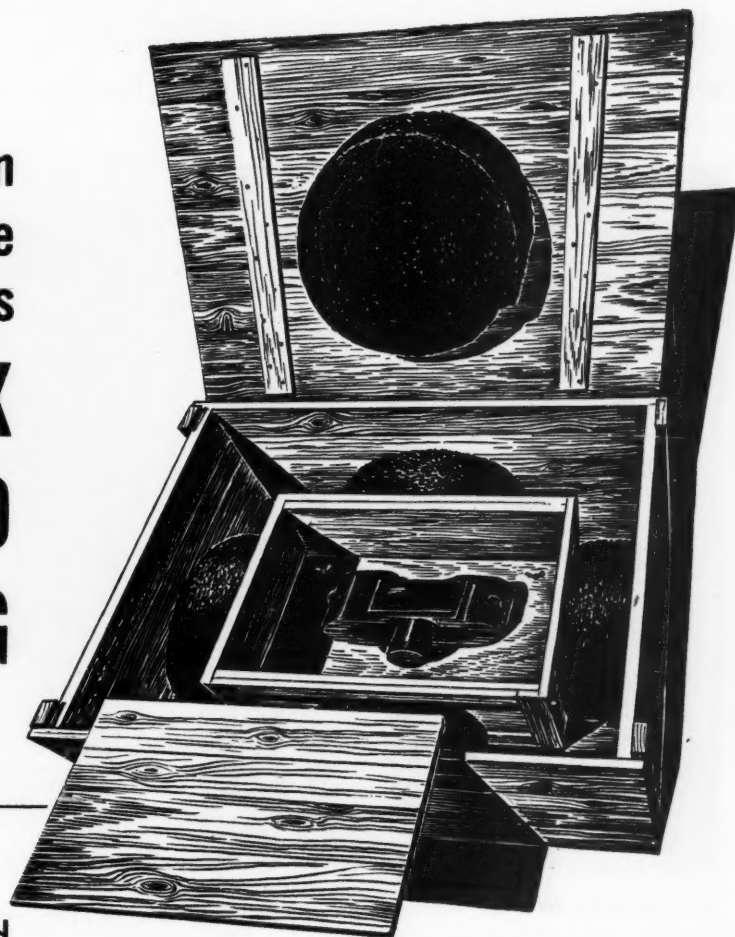


BAG FILLING MACHINES speed up packing of bulk materials in these open mouth, sewn bottom multiwall sacks. No human handling is necessary, important in shipping foodstuffs. Sewing equipment (background), tapes and sews tops of sacks as they are carried along on conveyor.



OPEN MOUTH MULTIWALL SACKS are being sewn shut here to provide a strong, leak-proof closure. Then they will be placed on the belt conveyor (foreground) and moved to shipping dock or storage area. Arrangements like this eliminate necessity for men to lift and carry heavy bags.

New Raytheon Magnetron Package uses **SPONGEX DESIGNED CUSHIONING**



Costs no more than spring suspension method

Raytheon engineers, seeking replacement for spring-suspension packing, decided upon float packaging. Their magnetron vacuum tube, secured in its inner case, weighed about 125 lbs. To prevent damage during transit their engineers called for not more than 50 g's in a three foot drop. Their need for an efficient float package cushioning was met by six specially designed Texlite rubberized curled hair pads. Here's why . . .

Added protection — Texlite kept impact below 35 g's in all drops up to five feet!

Easier, faster packing — The tube, secured in its inner case is rested on 6" x 15" Texlite

pads; the cover nailed on. It's that easy, that fast! And so simple, chances for costly mistakes are minimized.

Costs no more — This improved method costs no more than spring suspension . . . and eliminates scarce metal.

Raytheon's new packing method was not the result of costly trial and error. That the Spongex Packaging Laboratory met Raytheon's specifications was more than proved when first performance tests exceeded requirements.

Let our Packaging Laboratory, with its specialized equipment, analyze and prescribe *your* packaging requirements. Consult with us today.

*For better package
cushioning use*



Spongex products available for protective packaging.

TEXLITE rubberized hair and/or wool.

SPONGEX cellular rubber. *TEXFOAM* latex foam rubber.

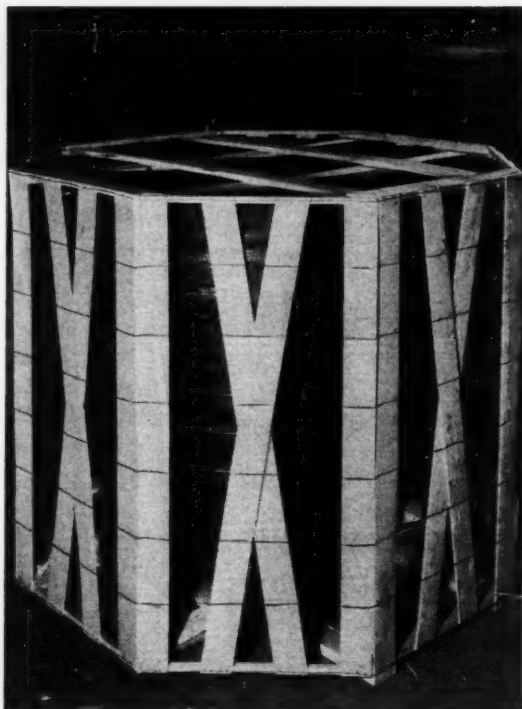
THE SPONGE RUBBER PRODUCTS COMPANY

584 DERBY PLACE, SHELTON, CONN.

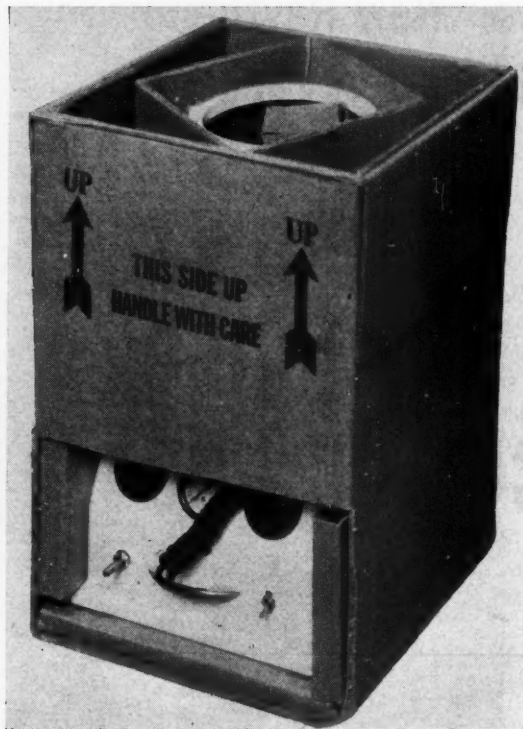
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What Kind of Containers? . . .

Here are 4 More Answers



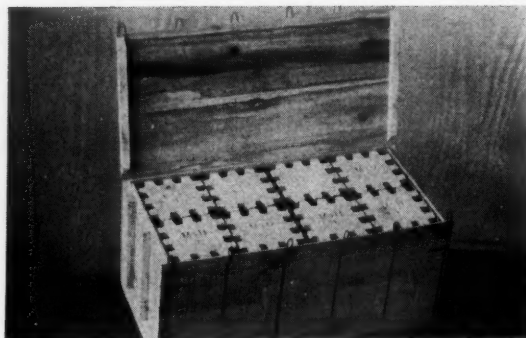
OCTAGONAL WIREBOUND CRATE delivers industrial ventilators safely in spite of their great bulk and weight. Crate was supplied flat and for assembly was wrapped around. Built-in supports provide protection and open-type construction eliminates "hidden" damage.



CORRUGATED BOX with top and lower portion of one side cut away for demonstration. Product is a portable embalming machine. Note special reinforcement at the top to protect glass bowl, and spacers near base to prevent lateral movement and damage to finished surface.



SLOTTED CORRUGATED BOX with seven separate pieces of interior corrugated packing will prevent damage to electric table grill. No other cushioning material is needed, and packing job is completed in relatively short time.



CORRUGATED SPACERS are used in this wirebound box to separate 32 pieces of No. 1 Ticknor Checkers (Fire Brick). The box is easily assembled with ends that slip into place and are held there by the cover when it is closed.

No "traffic jams" on PHILCO production lines

Look at that production line—neat as a pin! It's the Philco Corporation plant at Sandusky, Ohio. They turn out television receivers and automobile radios, and they can't afford a slow-down caused by improper placement of parts and materials in production and storage areas.

So they keep their aisles clear and uncluttered by marking their lanes and areas with "Scotch" Pressure-Sensitive Tape No. 471. And they've found *tape costs less*.

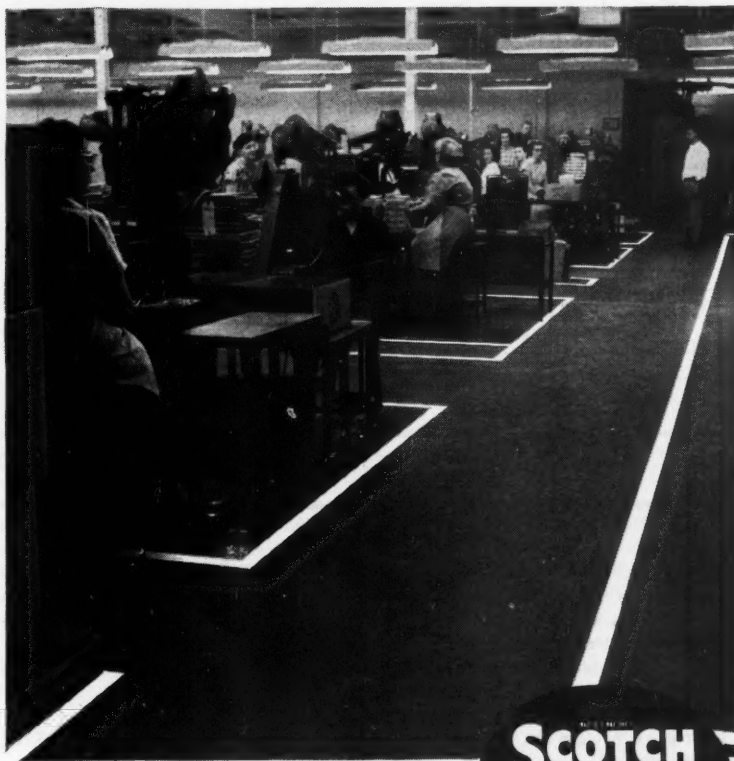


...thanks to lanes marked with tape that lasts 5 times longer!

There's no "drying-time" with tape, no delaying production—just clean the floor, put it down, adhere firmly with roller or wide-wheel truck. Plastic backing lasts 5 times longer than conventional materials. No special applying equipment needed. Easy to patch and match, too.

"Scotch" Pressure-Sensitive Tape No. 471 comes in 8 colors for lane marking, and in many widths. For complete information write: Minnesota Mining & Mfg. Co., Dept. F32, St. Paul 6, Minn.

We're looking forward to seeing you at
Booth 571 A.M.A. National Packaging
Exposition in Atlantic City, April 1-4

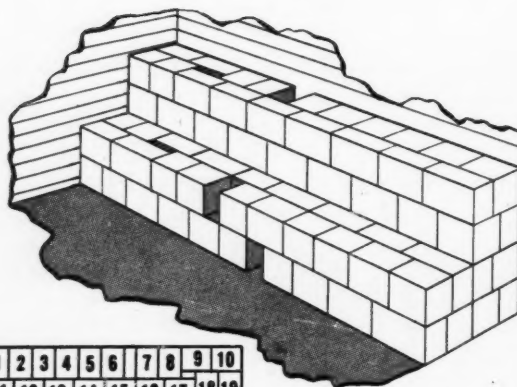


SCOTCH
BRAND
Pressure-Sensitive
Tape No. 471

The term "Scotch" and the plaid design are registered trade marks for the more than 150 pressure-sensitive adhesive tapes made in U.S.A. by MINNESOTA MINING & MFG. CO., St. Paul 6, Minn.—also makers of "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: 270 Park Avenue, New York 17, N. Y. In Canada: London, Ont., Can.

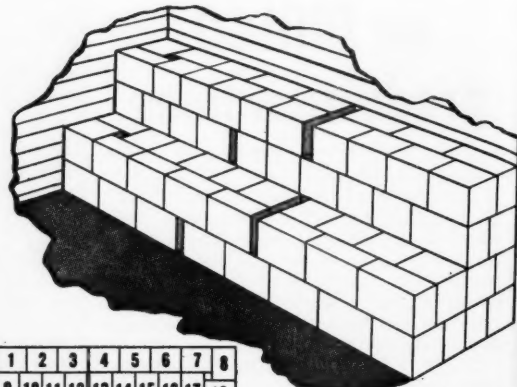
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Typical Box Car Loading Patterns for Cases of Cans



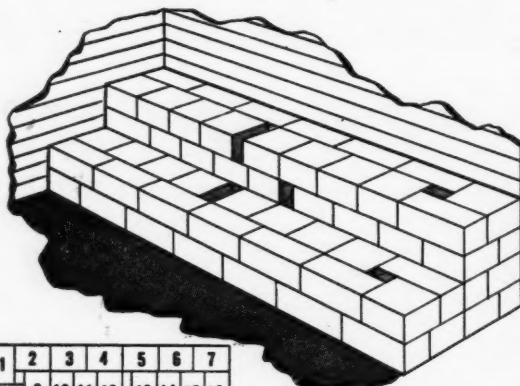
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	

Cases of #303 Cans
(24 Cans per Case)



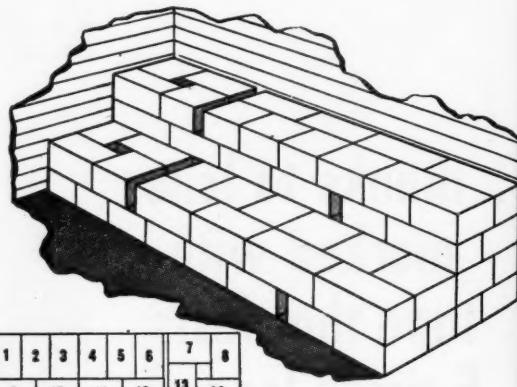
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

Cases of #2 Cans
(24 Cans per Case)



1	2	3	4	5	6	7
8	9	10	11	12	13	14

Cases of 8 oz. Cans
(48 Cans per Case)



1	2	3	4	5	6	7	8
9	10	11	12			13	14

Cases of #1 Tall Cans
(48 Cans per Case)

TYPES OF TRAILERS RECOMMENDED FOR VARIOUS CLASSES OF WORK

Class of work	1st choice	2nd choice	3rd choice
Accurate trailing	4-wheel steer trailers	Caster trailers	Fifth-wheel trailers
Reversible trailers	4-wheel steer trailers	Balanced trailers	
Power haulage with considerable hand handling	Caster trailers	Fifth-wheel trailers	Balanced trailers
Power-pushed trailers, good runways	Balanced trailers		
Power haulage, heavy unit-loads, good runways	Fifth-wheel trailers	4-wheel steer trailers	Balanced trailers
Power haulage, heavy unit-loads, rough runways	Fifth-wheel trailers	4-wheel steer trailers	
Power haulage, light unit-loads, good runways	Caster trailers	4-wheel steer trailers	
Light power haulage dirt floors	4-wheel steer trailers	Fifth-wheel trailers	

NOTE: Trailers will creep depending on radius of turns, weight of loads and conditions of runways. Caster trailers creep 3 to 4 in. each. Four-wheel steer trailers give practically perfect trailing. Fifth-wheel trailers creep 7 to 10 in. each. Balanced trailers with cross chain connection creep outward 7 to 10 in. each. Above figures are based on running on runways with right-angle turns of 7-ft. radius. On larger-radius turns the creep will decrease.

"We've saved 30% in handling costs with the Stanley Steel Strapping System"



• • Mr. Leonard L. Place, Shipping Mgr.
Continental Screw Co.,
New Bedford, Mass.
tells the **STANLEY MAN**

And this is but one of hundreds of success stories made possible with the Stanley Steel Strapping System. Just another example of how the Stanley Steel Strapping System and modern shipping methods can save man-hours — materials — money — shipping almost any product. The complete System includes tools, reels, seals, strapping and accessories — everything needed for your application. The Stanley Works, Steel Strapping Division, New Britain, Connecticut. Branch offices or representatives in 32 principal cities.



*Invite the Stanley Man
to call*

STEEL STRAPPING AND CAR BANDING SYSTEMS

STANLEY

Reg. U. S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

The Stanley Works, Steel Strapping Division
202 Lake St., New Britain, Conn.

Please ask your Representative to call and explain the advantages of the Stanley Steel Strapping System to me.

Name _____
Firm Name _____
Street _____
City and State _____

Circle No. 84 on Reader Service Card for more information

Your Corrugated Containers can have Nine Lives, too!



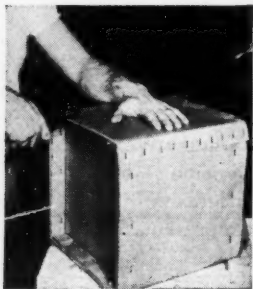
STAPLE AND RE-STAPLE for USE AND RE-USE



BOTTOMING CONTAINERS faster and better with a Bostitch Model F stapling machine... foot or motor operated. A low-cost investment.

1. **STAPLED CONTAINERS LAST LONGER**, because Bostitch staples make stronger joints, yet containers are not damaged when "unstapled" for re-use.
2. **STAPLED CONTAINERS ARE EASIER TO OPEN**, because Bostitch staple removers quickly release staples, leaving container intact for re-use.
3. **CONTAINERS REPAIRED BY STAPLING** are almost as good as new ones, because Bostitch stapling machines make patches strong and neat.

WHATEVER THE SIZE AND SHAPE of your corrugated containers, you'll find Bostitch stapling machines and staples that will *fasten them better and faster with wire*. Use the coupon below to get the latest tips on saving time, costs and corrugated board in your shipping room.



RE-USING CONTAINER MATERIALS to make up special sized cartons for miscellaneous shipments — with Bostitch stapling pliers.



REPAIRING USED CARTONS with a heavy-duty Bostitch Model 1/2C stapler. Drives staples up to 3/16" in length. Choice of 5 3/4" or 10" throat.



REMOVING STAPLES quickly and easily with Bostitch G-7 staple remover without damaging the carton. Lengthens re-use life.

PLEASE ATTACH THIS COUPON TO YOUR LETTERHEAD

BOSTITCH, 384 Mechanic Street, Westerly, R. I.

In the interests of saving corrugated board, please send me a free copy of your folder "How to Save Time and Money in 12 Important Shipping Room Operations."

Name Title

Firm

Street

City Zone State

BOSTITCH®

AND FASTER
fastens it better, with wire

ALL TYPES OF MACHINES
FOR APPLYING STAPLES
ALL TYPES OF STAPLES
APPLIED BY MACHINES

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PACKAGING AND SHIPPING SECTION

122

WHICH CONTAINER . . .

(Continued from page 111)

ities are required, cleated panel boxes sometimes are used. A framework of cleats to which solid or corrugated fiberboard panels are fastened gives this type of box good stability and strong corners and edges. In using it, many shippers anchor the product to the base and to one other side of the container, if possible. This prevents shifting and eliminates damages like scratches, and dents. Cleated panel boxes are often used to ship furniture and household appliances.

Nailed wood crates have light weight and strength qualities of cleated panels. In addition, their open construction makes it possible to see inside, permitting a constant check on the condition of contents.

Corrugated fiberboard and solid fiberboard boxes are usually of the slotted type and of one-piece construction. Shipped flat to the user, they can be stored easily in a comparatively small space until needed. It must be remembered in using this type of container that proper closure is of utmost importance, thus placing a large part of the responsibility for successful shipping on the shipper. In general, corrugated and solid fiberboard boxes are accepted for freight and express shipment when the gross weight of the box and contents does not exceed 160 lbs., and the inside dimensions (length, width, and depth added) do not exceed 120 united inches. These limitations are for one-piece boxes only, and can be exceeded in special cases which must be ruled on individually by carriers. Two-piece corrugated containers are generally permitted to carry heavier loads.

The Fibre Box Association has set up specifications for standard slotted-type boxes, and for ease of identification has assigned style numbers to the various types. A complete listing is contained in a handbook which it has published. Nine of them are shown in the chart. The regular slotted container, No. 1, is the most widely used,

MARCH, 1952 • FLOW

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coming in a wide variety of sizes. All flaps are the same length with the outer ones meeting at the center of the box. In box No. 2, center special slotted container, the inner flaps are of sufficient length to permit them to meet at the center, thus giving a double thickness of board at that critical point.

Outer flaps which overlap a specified amount are the important feature of style No. 4. Inner flaps do not meet in this box, resulting in a double thickness of outer flaps where the overlap occurs. Another version (box No. 5, not shown) has longer inner flaps which meet and provide triple thickness along the closure area. The full flap slotted container, No. 6, has completely overlapping outer flaps and inner flaps which are the same length as the outer ones and therefore do not meet. Another version of this style has meeting inner flaps to give three full thicknesses of board over the entire top and bottom areas of the box.

A half slotted container, No. 8, differs from the other styles of slotted containers in that it has a flanged cover which may be separate or attached as desired. Often, this box is used without the cover in the shipment of many household appliances. The product is anchored to a wooden frame at the base and the half slotted container is then slipped over and securely fastened thereto.

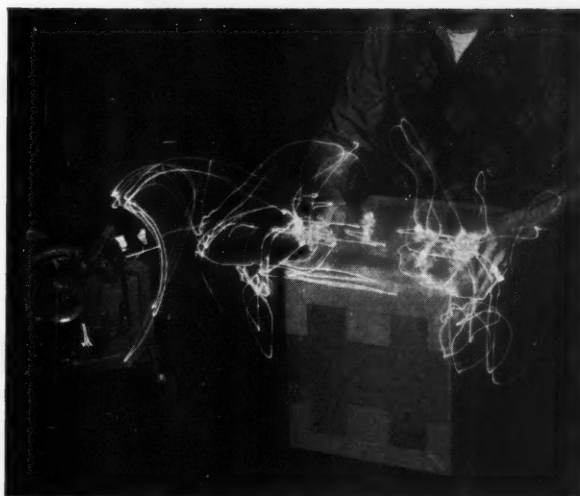
Other corrugated containers, shown in the chart, are the telescope type box, No. 21, the single lined slide box, No. 31, and the one-piece folder, No. 41. The telescope box may be had with a full depth cover, or with a cover of less than full depth, as desired. It gives added strength around the edges for products like paper, pictures and books. The single lined slide box consists of an inner scored sheet and outer taped tube. It provides double thickness of board on two sides and single thickness on top, bottom and ends. A stronger version, the double lined slide box is also made. The one-piece folder was designed specifically for prod-

How Snake Tape Seals

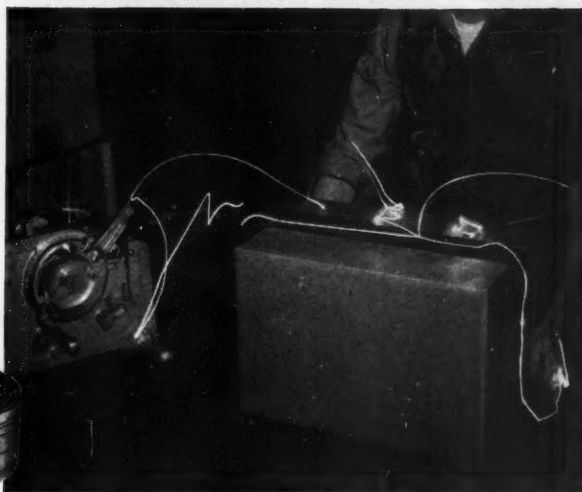
$\frac{2}{3}$ faster

stronger, cheaper

38.5 seconds was average sealing time required to apply 6 strips of non-reinforced gummed tape. (Lights mounted on shipper's hands made it possible for photos to show motions used in sealing cartons.)



11 seconds was average sealing time with only 2 strips of Angier Snake Tape. Yet, closure is stronger because reinforcing yarns (A) give strap-like strength. Asphalt bond (B) makes Snake Tape waterproof. Money can't buy better animal glue (C)



Snake Tape is Reinforced!

ANGIER CORPORATION, FRAMINGHAM 13, MASSACHUSETTS
FREE — Write for 20 yd. sample, literature, and name of your distributor — FREE

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123 PACKAGING AND SHIPPING SECTION

THE **IDEAL** (and no other Stencil Machine) HAS THE AUTOMATIC PAPER CARRIAGE



Shifts Like
A Typewriter

The Minimum
Margin Grip
Saves 25%
on Stencil
Board

The improved features of the new IDEAL STENCIL MACHINE are engineered to make your marking operation easier . . . speedier . . . more accurate. Easy to follow pointer . . . reading-angle dial . . . visible cutting. Automatic line spacer . . . a quick flip of a lever provides rapid carriage return. Cuts stencils for export markings with speed and perfect alignment. IDEAL is the COMPLETE STENCIL MACHINE.

IDEAL

Write for your copy of
the Ideal Shipping Guide

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Can You Use These?



PACKING SPACERS

★ CYLINDERS

★ BLOCKS

★ ROLLS (hard or soft)

Core Diameters:

1½, 2¼, 3, 4, 5 inches

Outside Diameters:

Up to 8 inches

Length of Rolls and Blocks:

From 1 to 48 inches

★ Used for the protection of
various fragile and/or heavy articles
in corrugated or wooden boxes . . .

Write for samples and prices.



CENTRAL FIBRE PRODUCTS CO., INC.

901 SOUTH FRONT STREET - QUINCY 2, ILLINOIS

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PACKAGING AND SHIPPING SECTION

124

ucts like books. Flaps may be short, as shown in the chart, or longer to meet in the center.

Plywood boxes are built to conform with 11 styles set up by the Plywood Box Manufacturer's Association of America. The cross-grain arrangement of the plies gives excellent strength and stability. Fully cleated styles A and B are recommended for export purposes. Easy stacking is one of the important features of style C, on which there are no top or bottom cleats. The three-way corners on styles D, E and G increase the strength and longevity of those boxes. The other designs illustrated in the chart give varying kinds of structural strength and different degrees of lightness.

Wirebound boxes and crates, available in many specialized forms of the four styles shown in the chart are relatively light in weight but exceedingly durable. Shipped flat by their manufacturers, they may be stored in a small space and are easy to assemble. Usual arrangement consists of a one-piece mat and two ends (ends may also serve as top or bottom) which are nailed or inserted in place. Styles 1, 2, and 2A which differ from each other chiefly in their style of closure are this type. Any of the three may be used as wrap-around containers for large products; one end serving as a base to which the product is anchored and the mat being wrapped around. The other end then serves as the top.

Style 3 illustrates all-bound wire-bound containers constructed in a single mat, with the two ends attached. They are designed to be completely assembled, ready for use in less than one minute.

Bags

For products which do not require rigid support, textile and paper bags are speedy and inexpensive.

Textile bags are usually made of burlap or cotton in a variety of weights and widths. Burlaps bags and many Onasburg types are designed to take rough handling

and to offer good resistance to puncturing, tearing, or snagging. For uses where appearance is of primary importance, cotton bags are often preferred.

Although textile bags ordinarily have a seam on one side, they are also made from tubular material to give a strong seamless type. Cotton and paper mesh types are also used extensively, particularly for shipping citrus fruit and vegetables.

Paper shipping bags may be single-wall grocery types for small metal parts or they may be multi-wall bags. The latter are made from two to six plies, or walls, of specification paper, often in combination with special coatings or laminants. Greater flexibility and strength are obtained by using several walls which are relatively light in weight, rather than few walls of heavy paper.

There are five major types of multi-wall paper shipping sacks. Listed on the chart from a to e, they are; (a) sewn valve; (b) pasted valve; (c) sewn bottom, open mouth; (d) pasted bottom, open mouth; and (e) sewn open corner, offset sewn. The two types of valve sacks are completely fabricated in the bag factory with a small opening left in the corner through which the sack is filled. The valve is made with an inner flap which operates as a self-closing check valve as soon as the sack has been filled. In cases where special protection is needed, extra sleeves are provided which prevent the sifting of free-flowing granular products.

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YOU GET

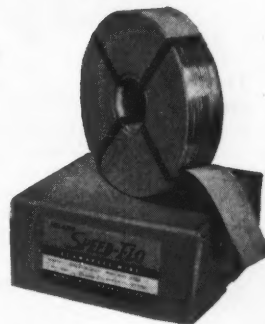
—Faster
Production
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Stitching
—at Lower Cost

WITH

SPEED-FLO WIRE

These exclusive features
tell you why —

1. Neutralized tension — no crawling, loosening or tangling.
2. Produced by "Uni-Draw" process for added strength, accurate size, smooth scale-free surface.
3. Perfect rounded edges, burr and flake-free — no channel or orifice clogging.



• Ideal for automatic, semi-automatic and hand-fed box stitchers.

• Available in 50, 25, 10 or 5 lb. Coils.

ONCE TRIED — ALWAYS USED!

INLAND WIRE PRODUCTS CO.

3960 SOUTH LOWE AVENUE, CHICAGO 9, ILLINOIS

If you package in cartons...

FULL TELESCOPE...



FULL OVERLAP



or BUNDLED

**you can cut costs with approved
super-strong TAPE-STRAP***

brand filament tape



**FREE
SAMPLE ROLL**

Many other Tape-Strap applications have been granted special approval. Write for free sample roll, and data folder.

APPROVED

Gray strips in diagrams indicate Tape-Strap. Applications shown are approved by The Official, Southern and Western Classification Committee, (Rule 41, Sec. 8 (b), Supp. 29, C.F.C. No. 19) ... and approved by Railway Express Agency, Inc., (Supp. No. 36, to Official Express Classification No. 34)

*Trade Mark

Switch to faster, safer, lower cost packaging with Tape-Strap. Users report savings up to 85% over previous packaging methods.

Tape-Strap is tremendously strong... so strong that strips only 10 inches long are approved for most applications. It's laminated, with a middle layer of resilient, shock-absorbing material that's imbedded with thousands of tiny filaments, 5,000 to the inch of width. Outside layers are tough, flexible kraft.

Permanent reinforcement. A deep layer of the finest, water-soluble gumming grabs hold the instant it touches the container, making Tape-Strap an integral part of the carton. Tape-Strap can't be slipped off and replaced.

You don't need special machinery to apply Tape-Strap. It's put on without pressure, has no cutting edge, can't injure merchandise or personnel. There's no disposal problem, either.

LEADERS IN THEIR LINE

MID-STATES Gummed Paper Company

2515 S. Damen Ave., Chicago 8, Ill.

BRANCH OFFICES: New York • Philadelphia • Cleveland
St. Louis • Detroit • Los Angeles

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ARROW GUN TACKER **FASTENS TAGS, LABELS,** **PROTECTIVE LININGS...** **MORE SECURE, FASTER** **WITH LESS EFFORT !!!**

TAGGING CRATES

Tags and labels are attached in a jiffy.



LINING BOXES

Handy for fastening protective linings in close corners.

LINING BOX CARS

One-hand operation permits freedom of other hand to hold material in place.



MORE AND MORE... production men with a view towards solving these fastening problems in the cheapest, fastest and most efficient way, are finding that the Arrow Gun Tacker meets their requirements better than any other method.

T-32 GUN TACKER
PRICE \$9.50

Slightly Higher
 In The West and Canada



Arrow Gun Tackers are self-feeding and load 150 staples of 3 different sizes: 3/16", 4/16", or 5/16" lengths. The Tacker operates with trigger-like action on the principle of double leverage. Easy action permits user to work at desired rapidity.

"DON'T JUST FASTEN IT — ARROW-FASTEN IT"

For further information write to:

ARROW FASTENER CO., INC.
 BROOKLYN 12, NEW YORK

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 PACKAGING AND SHIPPING SECTION

Open mouth sacks are factory closed at one end only, the other end being closed by sewing, wire tying, stapling, or by the use of gummed tape after the sack is filled.

The sewn open corner sack is an intermediate variety between the valve and open mouth type sacks. It has a sewn bottom and the top is partly closed by sewing. These sacks are often used for commodities which are liquid when poured hot and which harden into a cake the shape and size of the sack when cool. Usual procedure is to place the sack in a form and to flow the hot liquid in from a pipe inserted at the open corner. The plies at the open corner are brought together and stapled and tape is then stapled over this closure for further reinforcement. Sacks are placed flat on their sides to cool, giving a flat surface to the package for easy stacking.

Barrels

Barrels

Barrels and keys are made in sizes ranging from one to sixty gallons capacity. They are separated into three main categories: slack barrels for the shipment and storage of powders, semi-solids and solids; tight barrels for the shipment of liquids, semi-solids and heavy solids; beer barrels for the shipment and storage of malt beverages.

The slack barrel comes in a variety of sizes and styles. Some are tongued and grooved, others are not,



In OUR Plant we mark parts in COLORS!

Yes, in *colors* for easier assembling, stocking, identification, etc. And industry is finding the Flo-master Felt-Tip Marker ideal for all types of marking. Its felt tip glides over any surface—metal, plastic, wood, etc. with broad, bold lines or fine lines. Flo-master semi-opaque inks—waterproof, non-smudging, fast-drying—come in a wide range of colors.

For light colored surfaces, use Transparent Inks with "POCKET SIZE" Flo-master. For dark, hard-to-mark surfaces, use Semi-opaque Inks with the "KING SIZE" Flo-master.

Ask your supplier or write to Cushman & Denison Mfg. Co., Dept. F-1, 153 W. 23rd St., N. Y. 11.

KING SIZE
 8 3/4 in.



POCKET SIZE
 6 3/4 in.



Flo-master

FELT-TIP MARKER

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 MARCH, 1952 • FLOW

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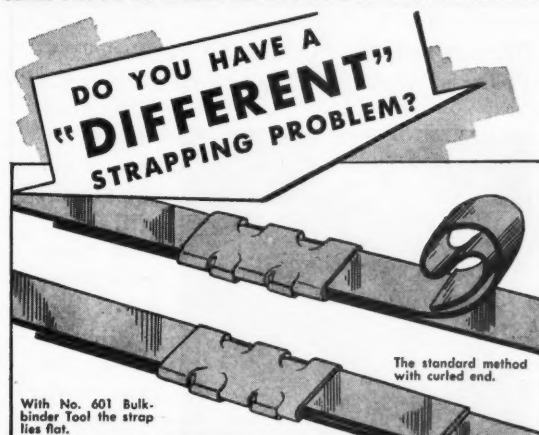
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and they may have beaded steel hoops, wire hoops, or wood hoops. It is important that the product to be shipped is placed in the proper type of barrel. A food product, for instance, cannot be shipped in barrels made of wood which imparts a foreign taste to the contents. Pine is one such wood which should be avoided in such cases. When shipping powdered material, a tongue and groove type slack barrel will help to insure against sifting. In general, a well-made, properly dried slack barrel can be expected to carry up to 400 lbs. of dry products in the domestic trade if handling and shipping conditions are satisfactory.

A tight barrel is what the name implies—liquid tight. It is usually employed for packing liquids, although it can be used for semi-solids and heavy solids. When using a tight barrel for liquids, it is necessary to take into consideration the liquid to be enclosed in determining the proper type of wood from which the barrel should be made. Linings are also sometimes necessary for certain types of liquids. Unless absolutely necessary, tight barrels should not be opened for filling, since leak-proof qualities may be damaged. Contents should be put in and removed from the barrel through the bung hole which might be located in the bilge or in the head.

Two types of wooden beer barrels are manufactured: the solid wood type made from quartered white oak, and the laminated keg made from veneers bonded together.

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A STOVE MANUFACTURER — for reasons of economy, safety and added shipping space formerly cut off the unused curled up portion of steel strapping by hand. He now uses an A. J. Gerrard No. 601 Bulk-binder tool with a built-in cutter which eliminates this operation.

Your "problem" can be easily solved. Call or write A. J. Gerrard & Co.

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STEEL STRAPPING

Saves Shipping Space...
No Occupational Hazard
... No Waste of Time.



Strap calculator.
Write for
your free copy.

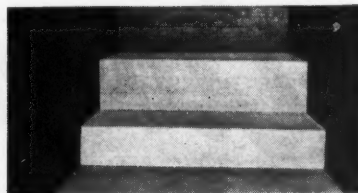


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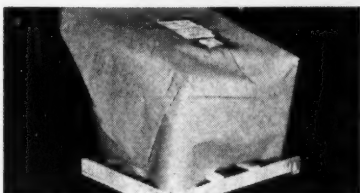
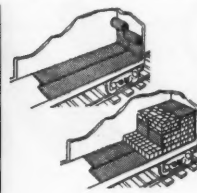
1950 HAWTHORNE PLACE, MELROSE PARK,
ILLINOIS (CHICAGO SUBURB)



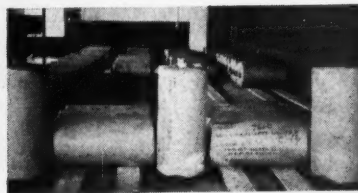
PROTECTS METAL SHIPMENTS



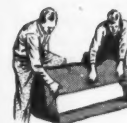
UNITIZED LOADING PROTECTS CARTON SHIPMENTS



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COMPLETE PROTECTIVE PACKAGING USE FIBREEN

FIBREEN takes the headaches out of your packaging problems because:

IT'S TOUGH, STRONG: Rugged FIBREEN is reinforced with tough, closely cross-laid fibres of steel-like strength, to avoid rips, cracks, punctures.

IT'S MOISTURE-PROOF: Double layers of highest quality, waterproof, pliable adhesive prevent moisture penetration.

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products from dirt and stains in transit or storage.

IT'S ECONOMICAL: FIBREEN is easy to handle. It is flexible, it forms readily around product contours. Saves time, labor; reduces damage claims.

FIBREEN has solved many protective packaging problems, in a wide variety of industries, at low cost. Try FIBREEN!

FIBREEN is available in practical roll widths of 36", 48", 60", 72", 84" and 96"... also in a new non-asphaltic adhesive.

For free samples and packaging information, write Dept. F3

THE SISALKRAFT CO., 205 W. Wacker Drive, Chicago 6, Illinois

FIBREEN IS A PRODUCT OF THE SISALKRAFT CO. • CHICAGO 6 • NEW YORK 17 • SAN FRANCISCO 5

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FLOW • MARCH, 1952

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PACKAGING AND SHIPPING SECTION

DRAMATIC PROOF OF RUST PREVENTION



is shown in this photo of crated roller shafts which were examined after the recent mid-west flood. A rust preventive agent was applied to these machine parts as part of the normal shipping operations. Even after

20 inches of mud and 20 ft. of water covered the container, the load came out in perfect shape. Another development: wrapping paper which contains a rust inhibiting agent which does away with manually applying some protective agent directly to the load.

Collapsible Containers

Collapsible containers in the form of: crates; solid or corrugated boxes; wire; or nailed wood boxes are easily stored, returnable containers finding widespread acceptance today. The fact that they may be knocked-down for return when empty increases their value as shipping containers.

Crates are often made of hardwood strips nailed together to form panels. Four of these panels are held together by wire hinges which permit the entire structure to be collapsed flat for shipping as a complete unit. For assembly, it is only necessary to drive nails through the side walls into the top and bottom sections.

Collapsible steel boxes are usually designed to handle loads up to 5000 lb. The component parts are hinged or slotted so that they can be assembled or disassembled easily. Ordinarily, they are mounted on pallet bases, as illustrated, to permit easy mechanical handling.

Wire boxes which are collapsible are available for shipping a variety of small products. They offer the advantages of being lightweight, yet rugged and strong. As with the other collapsible containers, the sides are either hinged or otherwise fastened so that they can be knocked down easily for storage and transporting purposes. Collapsible wood boxes may be made of plywood or of sheathed wood panels.

CUT CLOSING COSTS

with the Economical and Efficient...

- Requires no installation, supports or plant space... merely plug into any electrical outlet



- Entirely portable... weighs only 10½ pounds

- Unconditionally guaranteed!

- Handles all types of textile bags and most paper bags

- Economical to use... economical to buy!

FISCHBEIN Portable BAG CLOSER

Lightweight, practical, handy, easy to operate! Efficiency and reliability proved by over 4000 users in every part of the world under varying operating conditions. For details on how YOU can cut YOUR Bag Closing costs with the FISCHBEIN Portable BAG CLOSER... write:



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Industrial Sewing Machinery

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MINNEAPOLIS 3, MINN.

Metal Containers

Metal containers, in general, fall under three classifications; drums, boxes and skid boxes.

Steel drums are made in two types; light drums which are those made of steel lighter than 20 gauge and of 100 lb. capacity, and of open head construction; and heavy drums which are made of 20 gauge or heavier steel and are other than open head in style. The latter, called tight head drums, are usually equipped with two screw thread openings. The open head type is primarily used for the shipment of heavy liquids, shortenings, greases and other products hard to pour or pump from tight head drums. Lime dusts, granular materials and finished metal products, such as instruments and aircraft parts, are some of the materials now being shipped successfully in steel drums.

Fibre Drums

Dry bulk products requiring a sift proof container are often shipped in fibre drums. Available

in diameters from 8 inches up to 23 inches and in any capacity up to 75 gallons or 10 cubic feet, they combine strength with light tare weight. One manufacturer supplies drum type containers which are multisided and may be of various shapes to suit your product.

Fibre drums are made with fibre sidewalls but tops and bottoms may be metal, solid wood, plywood or fibre. The covers may be securely fastened with expanding metal locking bands or by various other types of closures such as clips, lugs or wire staples. Some drums are made with either metal or fibre telescopic covers, sealed with pressure sensitive tape or gummed kraft tape.

For special products drums may be waterproofed, greaseproofed or vapor proofed.

Fibre drums are also widely used for metal parts, metal stampings and delicate instruments requiring a strong container. Special types have been built for liquids and semi-liquids. Other special types

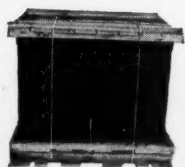
are available for pretroleum products such as oil, greases, asphalt, waxes and resins which may be poured hot and which solidify upon cooling.

The styles of fibre drums illustrated in the chart were selected to show a cross-section of the many types available. With these containers, as with all others discussed, a thorough study of your product, and shipping conditions and consultation with reliable container manufacturers is recommended before you select or design a shipping container.

* * *

FLOW wishes to thank the following companies for their cooperation in preparing the preceding report: American Box Co., Bemis Bro. Bag Co., Bigelow Garvey Lumber Co., Continental Can Co., Inc., Fibre Box Assoc., Fibre Drum Mfgs. Assoc., Robert Gair Co., Inc., Gaylord Container Corp., General Box Co., Hinde & Dauch Paper Co., International Paper Co., Sterling Lumber & Supply Co., Wirebound Box Mfgs. Assoc.

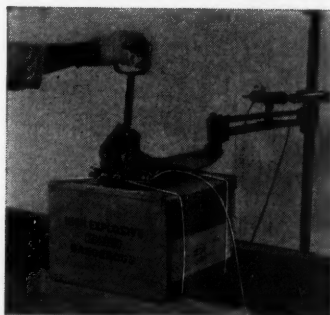
U-S-S Gerrard Steel Strapping fits all your tying jobs better!



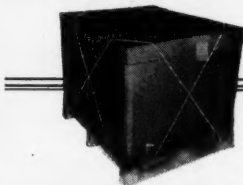
Pallet reinforced with Gerrard Round Steel Strapping permits quick packing and easy handling of shell cases.



Lift truck handles building tile quickly. Note only the two top layers need be strapped to make a firm pallet that protects material and stacks safely.



Model TI machine on suspension arm, securely ties two 16 ga. galvanized steel straps around a carton of powder. This method of closure permits re-use of carton many times.



Gerrard Round Strapping permits a tight Diagonal Tie to give firm reinforcement to all 6 sides of a carton, increasing its strength and rigidity.

- Gerrard Round Steel Strapping is versatile enough for all types of packing, from light cartons to large crates, from circular packages to odd-shaped bundles and heavy pallets.

Gerrard Strapping complies fully with Army-Navy specifications JAN-P-106A, JAN-P-107, and JAN-P-108 for overseas packing. It assures a tight, secure tie to final destination.

Call a Gerrard engineer for further information about the grade of Gerrard Round Steel Strapping and the type of Gerrard machine that will best fit your specific tying needs.

**GERRARD STEEL STRAPPING DIVISION
UNITED STATES STEEL COMPANY
2937 W47th St., Chicago 32, Ill.**

**U-S-S GERRARD
ROUND STEEL STRAPPING**



UNITED STATES STEEL

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WILCO PALLETS

"A TRADE MARK YOU CAN TRUST"



"WILCO" MEANS BETTER PALLETS
Why not try them in your plant?

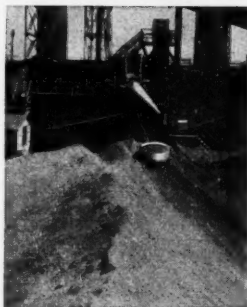
WILLIFORD MFG. CO.

Box 6095-F, Buntyn Station
MEMPHIS 11, TENNESSEE

Modernize BULK HANDLING METHODS

with the SAUERMAN SCRAPER

The versatility of Sauerman Power Drag Scrapers makes them ideally suited to outdoor or indoor service—on any small or large stockpiling job. One man has finger-tip control over the operation, whether the available space is merely a large bin or acres of ground. Any loose bulk material is quickly stored or reclaimed with considerable savings in manpower and overhead. First cost is reasonable, upkeep simple and use of power moderate.



Sauerman Scraper stores wet phosphate rock in high, wide pile alongside drying plant; then reclaims rock as shown in picture after drainage has taken place.

Write for free 32-page catalog that gives Money-saving Ideas on Bulk Handling.

SAUERMAN BROS. Inc.

540 S. CLINTON ST. CHICAGO 7, ILL.

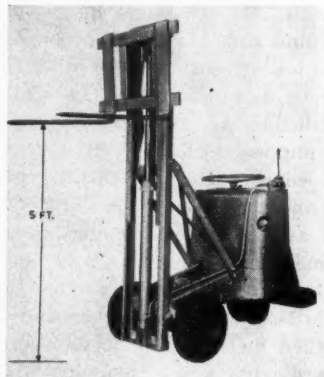
Circle No. 98 on Reader Service Card for more information

New Products

(Continued from page 39)

Fork Lift Attachment Kwik-Mix Co.

A 5-ft. power-driven fork lift attachment for this company's Moto-Bug has a capacity rating of 1000 lbs. at 15-in. load center. Standard forks are 20 in. long and adjust to any required width up to a maximum of 33 in. The fork lift unit operates from a power-driven hydraulic pump, and can be interchanged with other front end attachments. The complete truck weighs 1500 lbs., and is powered by a 6 h.p. gasoline engine.



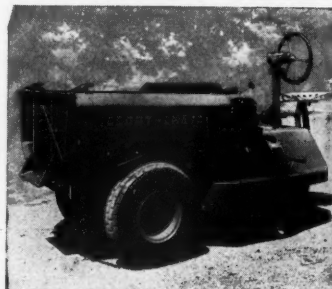
Circle No. 174 on Reader Service Card for more information

Motor Reducer Unit— Reuland Electric Co.

This unit consists of a standard Reuland fluid-shaft motor and gear train, designed into a single, compact

Wherever Used the SCOOT-CRETE

provides a modern and efficient method for all industrial handling jobs, both inside and outside the plant. The SCOOT-CRETE provides exceptional maneuverability with its caster steering, has large heavy-duty tires for traction to move a load over any surface. Models are available with 14-cubic-ft., 16-cubic-ft., and 20-cubic-foot capacity.



Here are two models of the SCOOT-CRETE. At the top is one unit equipped with a box body for handling bulk materials. A flat rack attachment can be interchanged with the box body for handling load units. The model shown at the bottom has a boom and scoop attachment for use in stockpiling, loading and unloading carriers, feeding hoppers, and many other applications where bulk materials are involved.



Economically priced, demanding minimum maintenance, capable of giving outstanding performance, investigate the SCOOT-CRETE in terms of your own operations.

Write today for complete details. There is no obligation.

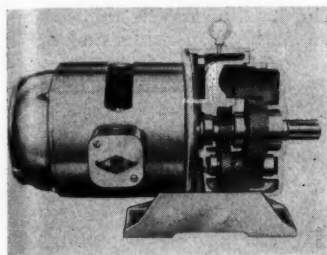
GETMAN BROTHERS

MANUFACTURING DIVISION

South Haven, Michigan • Office Phone 937

Circle No. 99 on Reader Service Card for more information

motor reducer. It converts the motor's conventional high-speed into a slow-speed, high torque output. The internal fluid coupling provides cushioned starting of heavy loads and protection against jamming of equipment.



Power-take-off shaft, gears and bearings are located adjacent to the vertical centerline of the base, transmitting load pull direct to the base. These motoreducers are available with squirrel cage, fluid-shaft or slip ring driving motor, either polyphase or single phase. Gear train can be either single or double reduction, with output speeds from 1 to 600 rpm.

Circle No. 175 on Reader Service Card for more information

Freight Elevator Sill—

Alexander Sill Co.

This device operates like a drawbridge over the gap between a freight elevator and building floors to provide a smooth surface for trucks entering or leaving the elevator. Various models are available to fit all types of elevators. They can either be mounted on the elevator car or to the building floor at each elevator door opening.

Circle No. 176 on Reader Service Card for more information



SAVED

**\$3,044 OVER
COST OF ELEVATOR**

WRITE—

for Suggestion. Give height, floor to floor and horizontal space available . . . Also maximum unit load.

- Maintenance — Zero
- Operating Cost — Negligible
- 500% Faster Loading and Unloading
- Safer than Elevator
- Flexible, with two-way Controls
- Prompt Delivery — Easy Installation

METZGAR CO.

MGFRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES • REEL DOLLIES & END-WOOD WHEELS.



423 Douglas N. W.

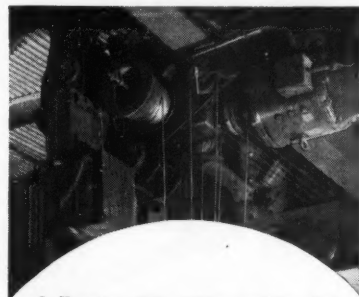
GRAND RAPIDS 4, MICH.

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FLOW • MARCH, 1952



ALL MOTIONS MOTORIZED To Reduce Costs



• Keeping this guide machine fed with steel strip was always a "touch and go" proposition requiring the attention of several men. To reduce handling costs and speed output, a new idea was tried: a one-ton, single I-Beam Reading Electric Crane, with all motions motorized, was custom-built for the job. Now the entire operation is under the thumb of one man—all he does is push the right button on the control pendant.

Modern materials handling is working wonders in reducing production costs these days. Chances are, a Reading Engineer can suggest ways to do the same in your plant if you give him the opportunity to personally analyze your operations. Simply drop us a line—there's no obligation.



READING CRANE & HOIST CORPORATION
2108 ADAMS ST., READING, PA.

CHAIN HOISTS • ELECTRIC HOISTS
OVERHEAD TRAVELING CRANES

**READING
CRANES**

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FASTER LOADING and UNLOADING of Trucks, Trailers and Freight Cars



1 Place Dolly near door or on tailgate.



2 Set loaded pallet on Dolly with Fork Truck.

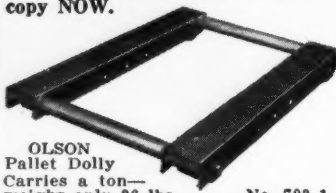


3 Roll to proper place for unloading.

Send for Booklet

OLSON Pallet Dollies move loaded pallets in Trucks, Trailers and Freight Cars for fast loading and unloading without laborious toting. They save labor. Speed loading and unloading. Eliminate tieup of fork trucks.

Many widely used types. Bulletin shows use in meeting today's high labor costs. Send for your copy NOW.

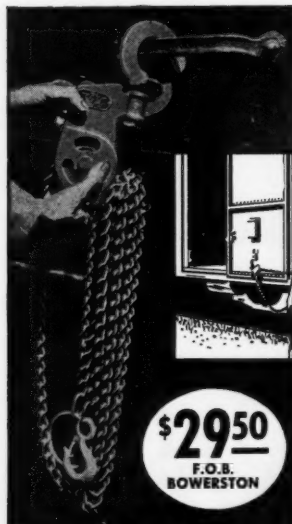


OLSON Pallet Dolly Carries a ton—weighs only 36 lbs. No. 703-1

SAMUEL OLSON MFG. CO., INC.
2426 Bloomingdale Ave. Chicago 47, Ill.
Send OLSON Pallet Dolly Bulletin.

Individual _____
Firm _____
Street _____
City _____ Zone _____ State _____

One-Man 20-Second BOX CAR DOOR OPENER!



Over 10,000 Nolan 1-man Car Door Openers now saving time ... saving money ... saving lives, for all types of businesses needing quick, positive box car door opening and closing. Guaranteed to open the most stubborn, balky box car door in 20 seconds or less!



\$29⁵⁰
F.O.B.
BOWERSTON

A few quick pulls on the NOLAN anchor chain does the job by one man. No gangs needed. No mangled limbs or loss of life from jammed or falling doors. The NOLAN saves its low initial cost in its first hour of operation. FREE CATALOG gives complete description. Order one or more NOLAN Model H Car Door Openers to meet all your needs.

THE NOLAN COMPANY • 110 Pennsylvania St. • BOWERSTON, OHIO

Circle No. 103 on Reader Service Card for more information

Scarifying Machine with Hopper—

G. H. Tennant Co.

Here's a scarifying machine that removes layers of grime from aisles, and then can dump the load of dirt in about 18 seconds. The machine travels at speeds up to 11 MPH, cleaning a path 36 in. wide, and has a capacity of 20,000 to 60,000 sq. ft. per hour. Driven by a 25 h.p. air-cooled engine, the scarifying cylinder spins at 1400 rpm and throws loosened grime into a built-in, 10 cu. ft. dirt hopper. At the same time, a vacuum fan pulls lighter dirt and dust into a heavy fabric bag. The hydraulically-equipped hopper can lift and dump an average load of 530 lbs. directly into a tote or trash box.



Circle No. 177 on Reader Service Card for more information

Extendable Belt Conveyor—

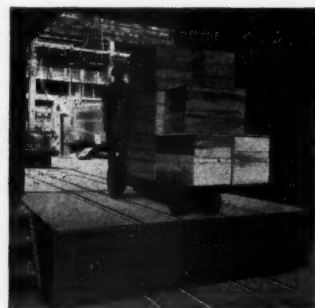
Standard Conveyor Co.

The company manufactures a horizontal portable belt conveyor which extends and retracts. Called the Extendoveyor, it is designed to reach into trailers,

Globe Ramp Eliminator Keeps Plant Traffic on the Level

A Globe Ramp Eliminator averts the dangers of makeshift gangplanks and provides safe, dependable, and fast vertical transportation between levels. This means less risk of damage to materials or injuries to workers.

With a Globe Ramp Eliminator, movement of materials is always across a sturdy, safe level platform instead of up or down steep ramps or temporary makeshifts. This adds up to safer, faster, easier, and cheaper handling of goods.

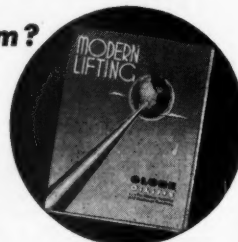


Got a Lifting Problem?

GLOBE
has the answer

Muscle is the world's most wasteful lifting power. A Globe OILIFT will do it cheaper and better.

For helpful information on Self-Leveling Ramps, Machine Loading Lifts, Industrial Truck Service Lifts, Production Lifts, etc., write for bulletin F-313.



GLOBE HOIST COMPANY • 1000 E. Mermaid Lane, Philadelphia 18, Pa.
(Factories at Des Moines, Iowa & Philadelphia, Pa.)

Circle No. 104 on Reader Service Card for more information

trucks, box cars, warehouse areas and across platforms.

It can be extended to its full length of 46 ft., 3 in. to deliver into the far end of the car or trailer. As the area becomes filled with commodities, it can be easily retracted, as shown in the illustration. Sacks, cartons, cases and other commodities can be carried on the Extendoveyor.

It is also made in the double-extendable type, where either end may be retracted or extended.

Circle No. 178 on Reader Service Card for more information

Heat Treating Basket—

Hoffman Co.

Here's a special basket designed especially for handling welding electrodes through a series of heat treating cycles. It is built to stand up under repeated high temperatures and alternate cooling, and at the same time to provide for heat expansion of the rods. These circular-shaped baskets can handle small bundles of rods, and can be easily stacked, separated and re-stacked.

Circle No. 179 on Reader Service Card for more information

Circle No. 105 on Reader Service Card for more information

Hamilton INDUSTRIAL TRUCKS

There's no substitute for experience and skill. Hamilton Floor Trucks are dependably good because the men in our organization have been building floor trucks for over 40 years.

Hundreds of styles and sizes to choose from—platform trucks, two-wheel hand trucks, box trucks, stake trucks, shelf trucks, wagon trucks, dollies, barrel skids, lift truck system, etc. Special trucks, of wood or steel, designed and built to meet individual requirements.

CASTERS and WHEELS

Hamilton Casters and Trucks are standard equipment in many of the country's largest plants. If you are not using them in your plant, it will pay you to get acquainted with Hamilton's expert construction and superior performance.



(Illustration of No. 880 Truck)

Write for Catalog Today

THE HAMILTON CASTER & MFG. CO.

1672 Dixie Highway

Hamilton, Ohio

3 WAYS TO GET A TRUCK THROUGH A DOOR

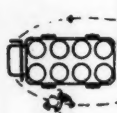
Stanley Magic Door Equipment is air-operated, with light beam control. It can be fitted to any door in your plant—off freight platforms, and between departments. Proved practical and trouble-free by years of service in hundreds of installations. Write for descriptive folder.



Reg. U.S. Pat. Off.

DOOR CONTROLS "The Magic Door"

COMPLETELY AUTOMATIC DOOR CONTROLS FOR
SWINGING, SLIDING OR FOLDING DOORS

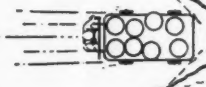


1. The "Slow-poke" Method.
Stop to open the door. Stop
to close the door.

Result: Delays.

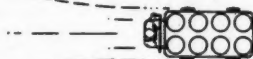
2. The Blitzkrieg technique.
Butt your way through.

Result: Door damage, truck
damage and product damage.



3. The modern Stanley Magic
Door solution. Doors open and
close automatically.

Result: Faster trucking... savings
in time, repairs, and heating costs.



HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

The Stanley Works, Magic Door Division, 301 Lake St., New Britain, Conn.

Gentlemen: Please () Send full information on Stanley Magic Doors.
() Have your representative call on us.

Name

Firm Name

Street

City

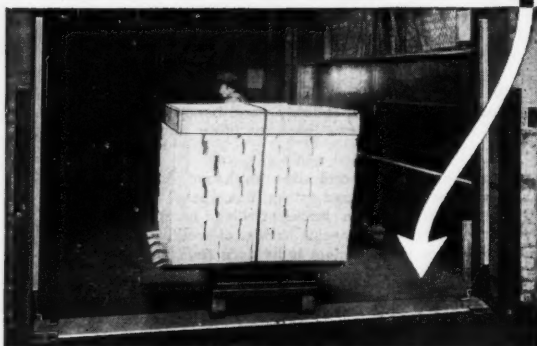
State

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Circle No. 107 on Reader Service Card for more information

BRIDGE THAT GAP

Leading into your Elevator



The ALEXANDER Elevator Sill

attaches to the building floor landing of each door opening and functions like a drawbridge AUTOMATICALLY with the opening and closing of doors.

DOWN—it provides a smooth, safe trucking surface for trucks to roll on and off elevators. Protects elevators and doors, prevents damage to goods, minimizes accidents to personnel.

RAISED—it forms a guard, protecting the doors against ramming by trucks.

The Alexander Sill is thoroughly tested, fully patented—used by more than 5,000 satisfied customers.

Write for new catalog

ALEXANDER SILL COMPANY

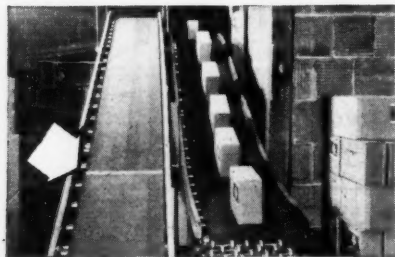
Patentee and Exclusive Mfrs. of Elevator Sills since 1920

970 Milwaukee Ave. Dept. F. Chicago 22, Ill.

ALLIGATOR



CONVEYOR BELT LACING



Every
Tooth
A Vise*

**in Long Continuous Lengths
for Conveyor Belts**

- ★ Excellent for Package Conveyors, Portable Loaders, Trenching and Ditching Machines, etc.
- ★ In canneries where corrosion or rust is a problem specify Alligator made of Monel.
- ★ For magnetic separators or anti-sparking specify Alligator made of Everdur.
- ★ Separable and smooth on both sides.
- ★ 12 sizes. For belts from 1/16" to 5/8" thick—and any width.

Order from Your Supply House. Ask for Bulletin A-60.

FLEXIBLE STEEL LACING CO. 4702 Lexington St., Chicago 44, Ill.

JUST A HAMMER TO APPLY IT

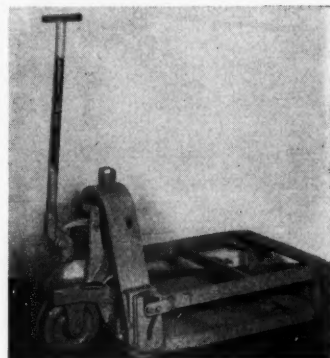
Circle No. 108 on Reader Service Card for more information

134

Dual-Purpose Pallet Trucks—

Yale & Towne Mfg. Co.

A dual-purpose superstructure on this company's hand lift pallet trucks enables them to handle 7-in. and 12-in. skids as well as single or double faced pallets. When the superstructure is in a raised position, it is clamped vertically to provide a backrest for the pallet load on the truck. When lowered, it is adjustable to either 7-in. or 12-in. skid heights by a cam and slot arrangement. The truck is available in either mechanical or hydraulic lifts.



Circle No. 180 on Reader Service Card for more information

Flexible Cutout Coupling—

Anchor Steel & Conveyor Co.

John Waldron Corp.

Anchor-Waldron is the trade name of this cutout

IT'S NEW!

LOWEST PRICED ALL QUALITY TROLLEY HOIST

Each model of the new "Packet" Trolley Hoist — 1/2, 1 and 2 ton capacities available — is tagged with an unprecedented low price! Many other plus features, too! Adjustable to accommodate a range of I Beam sizes, without dismantling. Rugged, all steel construction. All shafts and gears turn on "lubricated-for-life", shielded ball bearings for easy hand chain pull. Precision cut gears of heat-treated alloy steel provide longer, smoother, more efficient operation. Heat-treated, high-carbon steel load chain. Hardened, high carbon steel trolley wheels with double row ball bearings — for easier rolling. And more! For complete details contact your Harrington Distributor, or write direct.

THE

HARRINGTON

COMPANY

1638 W. CALLOWHILL ST.
PHILADELPHIA 30, PENNA.

HOIST MANUFACTURERS SINCE 1876

**Electric
Hoists
Hand Chain
Hoists
Lever Pullers
Trolleys**

Circle No. 109 on Reader Service Card for more information

MARCH, 1952 • FLOW

and cutout coupling which is manufactured by the Anchor Steel & Conveyor Co. and distributed by the John Waldron Corp. Used as protective devices, these units are installed on various drives to disengage when excessive loads are placed on the equipment, thus avoiding damage to machinery.

Circle No. 181 on Reader Service Card for more information

Unloader Transfer Device—

Sahlin Engineering Co.

A mounting arrangement for the Sahlin press unloader permits transfer of the device from one press to another in a matter of minutes. The device allows users to keep unloaders in service while presses are down for repairs or die changeover. Complete assemblies are supplied with specially-shaped side plates which hook onto cross bars of a bracket permanently attached to the top of the press. The mounting is fastened and locked at

one point only. Holes in the side plates facilitate lifting and transfer of the unloader by crane.

Circle No. 182 on Reader Service Card for more information

Fork Attachment—

Big Joe Manufacturing Co.

This fork attachment is available with the company's All Purpose Lift. Some of the features incorporated into the lift include a heavy-duty, foot-operated hydraulic lifting unit; self-locking, two-wheel, tip-toe-operated safety brakes; non-slip rubber grips with hand safety guards; double-duty roller bearings at all points of friction. Capacity is 750 lbs., proof-tested to 1500 lbs. Height of the lift is 52 in.

Circle No. 183 on Reader Service Card for more information



Well Stacked!

● Prefabricated pallet racks by Equipment Mfg. Inc. permit stacking to conserve floor space without tying up low level material. They are engineered for strength, safety and flexibility. There's a type to suit your particular needs.

Write for our catalog. It illustrates all types.

**EQUIPMENT
MFG. INC.**

21552 Heever Road Detroit 5, Mich.

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Circle No. 111 on Reader Service Card for more information

Chem-Board Tote Boxes

HELP BUILD AIRCRAFT



Many plants building the planes needed to make the nation strong keep materials, parts and sub-assemblies flowing to production lines in thousands of Convoy Chem-Board Tote Boxes. The nesting boxes illustrated are stored in minimum space while awaiting new loads.

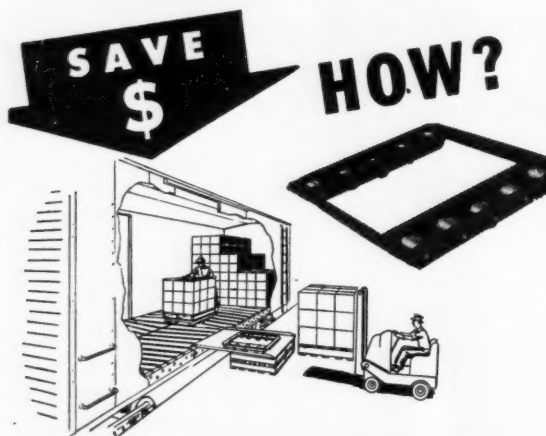
Chem-Board is made of corrugated fibre-board, chemically impregnated by Convoy's exclusive process. It is flint hard and rock strong. It is not weakened by moisture. It is impervious to machine oils. Convoy Tote Boxes cost and weigh 50% to 60% less than steel.

The lightness, toughness and economy of Chem-Board Tote Boxes are unmatched. Tell us the style you use . . . we'll send a free production sample from the next run for you to test. As a guide for present and future availability, our current production capacity is reserved for the unprecedented demands from old customers and "DO" orders. Orders rated DO-MRO are acceptable. Write today.

Standard and Custom-made
Nesting Stacking Vertical
CHEM BOARD TOTE BOXES

CONVOY, INC.

P.O. Station B, Box 216-F
CANTON 6, OHIO



ACE "REEFER" PALLET ROLLERS

Speed up tonnage • Load and unload Reefers with slatted decks—Quickly—Easily—Economically • Time and field proven • Write for Engineering Bulletin No. 103.

PATENTS PENDING DISTRIBUTORSHIPS AVAILABLE

FRANK L. ROBINSON COMPANY

MANUFACTURERS

LATHAM SQUARE BLDG. • OAKLAND 12, CALIF

Circle No. 112 on Reader Service Card for more information
136

Collapsible Mesh Baskets—

Pittsburgh Steel Products Co.

The base on this collapsible mesh basket permits easy entry by all types of industrial trucks, due to the

absence of a center strip leg. When tiered, the four legs of the base lock sides and ends of each unit to form a solid, visibly-inventoried stack. In the collapsed form, five of these containers require the space cubage equal to one with sides erected.



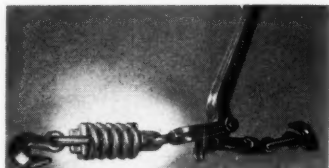
Circle No. 184 on Reader Service Card for more information

Spring-Action Load Binder—

Canon Cast Products Co.

Designed for military use, these load binders feature the compensating action of a spring. The spring binder

maintains constant, uniform tension and eliminates to a marked degree the breakage of chain and hooks under various conditions. Four models are available, and they begin at 9000-lb. capacity.

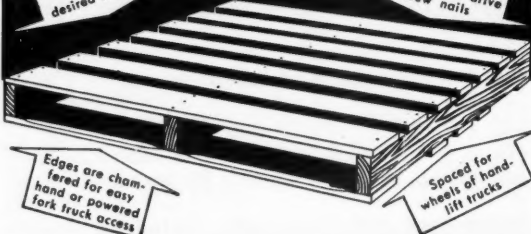


Circle No. 185 on Reader Service Card for more information

CUSTOM MADE FOR LONGER SERVICE

All lumber is
finished to
desired thickness

Boards are squared
and pre-drilled for
cement-coated drive
screw nails



Edges are cham-
fered for easy
hand or powered
fork truck access

Spaced for
wheels of hand-
lift trucks

Every CARDINAL PALLET is custom-made for its specific Materials Handling function. A mixture of Kentucky hardwoods in No. 1 and No. 2 quality are used. Boards are pre-drilled for steel cement coated drive screw nails.

We build all types except the expendable.

Write for detailed information covering Pallets, Pallet Boxes, Pallet Tops and Dividers. Also boards cut to length and pre-drilled for repair of old Pallets.



**HOPKINSVILLE PALLET
COMPANY INC.**

GENERAL OFFICES • 6432 CASS AVENUE • DETROIT 2, MICH.

Circle No. 113 on Reader Service Card for more information
MARCH, 1952 • FLOW

Crane Scale—

Hydroway Scales, Inc.

This hydraulic crane scale is available with a dial that indicates weights in both kilograms and pounds, making possible faster and more accurate weighing of products and materials for export and import. Tare adjustment for net load indication and optional tilt face dial for high level reading as well as other features of the standard models are provided. The scale is available with 24 in. and 30 in. diameter dials and in 5, 10 and 20 ton capacities. Larger capacities can be provided on special order.

Circle No. 186 on Reader Service Card for more information

Extra-Heavy Pneumatic Tube—

The B. F. Goodrich Co.

An extra-heavy pneumatic tube has been developed as an answer to one of the major problems in the use of pneumatic tires on mobile mine equipment—the inflation of tires on shuttlecars. Made of butyl rubber, the tubes are built almost twice as thick as conventional tubes used in this service. They are made in three sizes: 7.00-15, 7.50-15 and 8.25-15. These tubes are said to be able to hold their recommended air pressures from one year to 18 months with only minor reduction in air pressure. They are equipped with a special valve cap which can be put on or taken off only with a small key.

Circle No. 187 on Reader Service Card for more information

Featherweight Electric Tractor—

Automatic Transportation Co.

This featherweight electric tractor, designed to reduce order picking time, can tow loads weighing as much as 20,000 lbs. on a level floor. The 1500-lb. unit has controls at the rear, enabling the driver to get on and off easily. Auxiliary forward movement control handles on each side enable the operator to "walk" the tractor if traveling distance is short. The unit is 29 in. wide, and turns in a radius of slightly more than its length of 52 in.

Circle No. 188 on Reader Service Card for more information

FLOW • MARCH, 1952

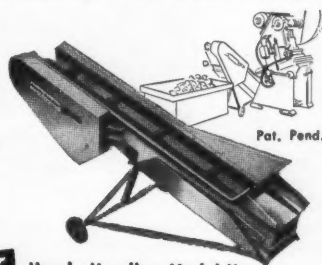
Big MAN-HOUR Savings

with Belt portable handling equipment, built especially for a variety of industrial jobs!

Stop your material-handling profit leaks by using lightweight, portable and inexpensive Belt conveyor equipment. Reduce the time and cost of scoop-shovel jobs, stacking and storing, loading and unloading packaged goods and bulk materials.

WRITE TODAY FOR PRICES AND LITERATURE!

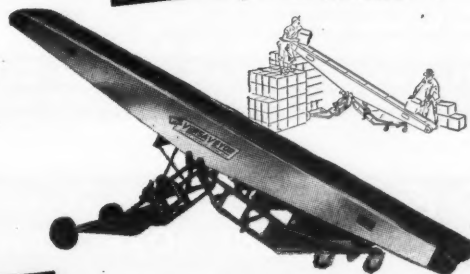
Lengths—6, 8 or 10 ft. • height of undercarriage easily adjustable • will handle 100 lb. distributed load, 25 lb. maximum unit load • aircraft-quality, aluminum-alloy frame construction • 50 f.p.m. chain speed.



Pat. Pend.

BELT

Handy-Handler, Model U



BELT

Versaveyor, Bag and Box Handler

Overall lengths—13, 15, 17 or 19 ft. • 18-in. bed • can be operated with or without either or both undercarriages • 60 f.p.m. belt speed • aluminum-alloy frame • 600 lb. distributed load • 150 lb. unit load.



BELT

Model S

Handy-Handler

Standard 16-ft. length; also has 4-ft. extension section (special lengths available) • tough, aluminum-alloy construction • weighs 97 lbs. without the easily detachable power unit • can be used with or without dolly.

Pat. Pend.

BELT

THE BELT CORPORATION

7406 STAHL ROAD

ORIENT, OHIO

Circle No. 114 on Reader Service Card for more information

**Engineered
FOR GREATER WORK-POWER
and Comfort**

**MilSCO
MILWAUKEE**

**DELUXE
CUSHION
SEAT**

*Genuine
Black
Leather*

**FOAM
RUBBER
CUSHION**



Safety with riding comfort . . . and wearability . . . built-in strength and sturdiness. Finest of materials for rough going. Padded with four inches of foam rubber in the seat, two inches of foam rubber on back and side walls. Covered over-all with genuine black leather. Safety side handles. Many other models. Write for details.

MILSCO MANUFACTURING CO.
2742-F NORTH 33RD ST., MILWAUKEE 45, WISCONSIN

*It Costs a Lot Less to Handle
CASES, CARTONS, BOXES, CANS*

WITH
THE **ULTIMATE
DOUBLE-FLEX
CHAIN CONVEYOR**



Here's the conveyor with the broad, flat carrying surface, that's easy to install with all curves live!

For beer, beverage, whiskey, food cartons and cases, milk cases and cans, ice cream cans and packages . . . the **ULTIMATE DOUBLE-FLEX** does a real job. You can convey up and down inclines, around curves, through holes in walls, inside or outside of buildings, around short radius, horizontal curves in a smooth uniform movement. Get the facts today!

**FLEXIBLE
ECONOMICAL
PRACTICAL**

FREE! MAIL THIS COUPON FOR FURTHER DETAILS

ISLAND EQUIPMENT CORP.
27-01 Bridge Plaza North
Long Island City 1, N. Y. Dept. F3

Sounds good. Send me all the facts on how the **ULTIMATE DOUBLE-FLEX CHAIN CONVEYOR** will save us money.

COMPANY.....
NAME.....
ADDRESS.....
CITY..... STATE.....

Circle No. 116 on Reader Service Card for more information

**Rolling Doors with Windows—
The Kinnear Manufacturing Co.**

Narrow, transparent panes of heavy-duty plastic are built into one or more of the interlocking steel slats of these steel rolling doors. These windows at or near eye level permit anyone inside a building to see who is outside of the door before opening it. Also, they allow entry of daylight through the door when it is closed. Doors can be equipped for operation manually, mechanically, or by motor, with remote control from any number of electric pushbutton stations.

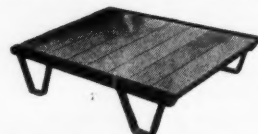


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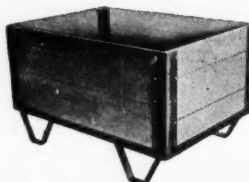
**One-Man Loader—
Belsaw Machinery Co.**

Loading or unloading in places where no loading docks are available can be facilitated by this loader, which weighs 149 lbs. The 10-foot conveyor frame is

**In production or in storage
IRONBOUND EQUIPMENT HANDLES
SMALL PARTS MORE EFFICIENTLY**



Standard 2-way entry bolted type skid built to handle loads up to 5 tons.



Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.



Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!



IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
30 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

Circle No. 117 on Reader Service Card for more information

made of 3½ in. by 10-gauge channel steel, and the top is designed to maintain its position on a truck bed or ledge under the load. Rollers are steel, ball bearing, 16 in. wide on 12-in. centers. The loader is equipped with a 2-speed winch (9 to 1 and 3 to 1 ratio) and ¼ in. steel cable. The

extension handle permits loading of wide boxes or crates, and winch may be locked at any height on the loader.

Circle No. 190 on Reader Service Card for more information

Combination Lift, Hand Truck— The Port-A-Lift Co.

One man can lift and transport loads up to 500 lbs. with this hydraulic lift and hand truck. The hydraulic

lift jack unit is connected to the platform with a roller chain, and 10 strokes of the foot pedal raises the platform to its top level of 36 in. A hand release lever permits the operator to lower the platform to any level and at any speed. When fully lowered, the platform is 1½ in. above floor level. Standard platform size is 24 in. by 14 in., and the unit

can be equipped with specially-designed forks or platforms.

Circle No. 191 on Reader Service Card for more information

Detachable Ram— The Baker-Raulang Co.

This 10-ft. detachable ram can be installed or detached from the truck carriage in a matter of seconds.

In operation, the ram is used to pick up coils of steel from storage and take them to feeders. To pick up the ram, the truck operator moves the truck into position at the rear of the ram and raises the carriage so cradle

arms on the carriage engage a mounting spool on the back plate of the ram.

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EASY DOES IT!

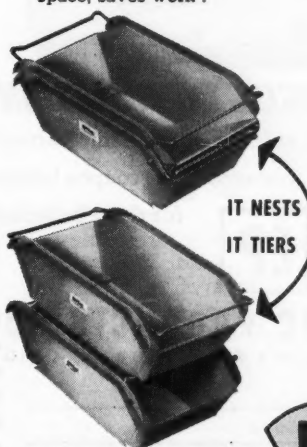
This photo shows some of the many advantages of the new NesTier and the NesTier system of materials handling. The contents of these NesTiers need no identification for they are all clearly visible as well as accessible. The NesTier 4 Wheel Truck, designed for easy movement through narrow aisles and congested areas, will return to the stock room with many times this number of nested, empty NesTiers. The NesTier system saves time, saves space, saves work!

TWO SIZES

No. 220—16 ga. steel, 22½" long, 12½" wide, ¾" bails, weight 15 lbs.
No. 175—18 ga. steel, 18½" long, 9½" wide, ¼" bails, weight 6 lbs.
All welded construction, standard baked enamel, green.

Write for full details on the NesTier system including racks, trucks, conveyor hangers, dollies and inserts.

Our service includes complete engineering advice to systematize small parts handling in your plant.



Metal Specialties Division



THE CHAS. WM. DOEPKE MFG. CO., Inc.
ROSSMOYNE, OHIO

Circle No. 118 on Reader Service Card for more information

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FLOW

FLOW • MARCH, 1952

139

Circle No. 119 on Reader Service Card for more information

EXTEND YOUR CONVEYOR LINES WHERE NEVER BEFORE POSSIBLE!



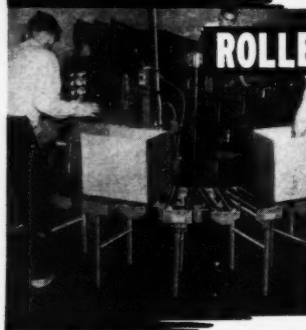
The
FLEX-CO
way

★ Adjustable

★ Flexible

★ Portable

ROLLER CONVEYORS



Flex-co Roller Conveyors are demountable to 8 inch sections so that they can easily be carried from one location to another and added to as needed . . . as your ever-changing conveyor problems require new conveyor set-ups. Corners, posts, obstructions, etc. are no longer a problem in keeping your production lines operating. You simply convey around them with FLEX-CO Portable, Adjustable, Flexible Roller Conveyors that are designed for constantly changing production problems.

Write today for complete details

BERLIN CHAPMAN CO. BERLIN, WIS. SINCE 1909



BATTERY CHARGING INFORMATION

to help you get more efficient and reliable battery charging at lower cost. Just send in the coupon below

for these Bulletins

EP

THE ELECTRIC PRODUCTS CO.
1730 CLARKSTONE ROAD • CLEVELAND 12, OHIO

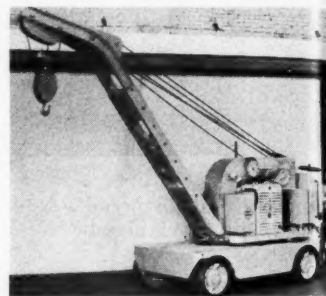
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TITLE _____
COMPANY _____
STREET _____
CITY _____ ZONE _____ STATE _____
X-79

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140

Flexible Industrial Crane— The Elwell-Parker Electric Co.

This electric powered, mobile crane is ideal for handling bulky, odd-shaped loads which do not lend themselves to conventional handling methods using a fork or platform truck. Some of its design features are: four wheel steer, telescoping boom to provide boom lengths of from 12 to 19 ft., worm drive, welded steel frame, and three individual motors with solenoid-operated brakes for powering slew, hoist and boom. Crane capacity is 10,000 lbs. at 5½ ft. radius. With the boom fully extended, a hook height of 18 ft. can be obtained. Overall length is 130⅝ in., width is 66¾ in. The truck turns in 95 in. intersecting aisles, and maximum slew is 296 degrees.

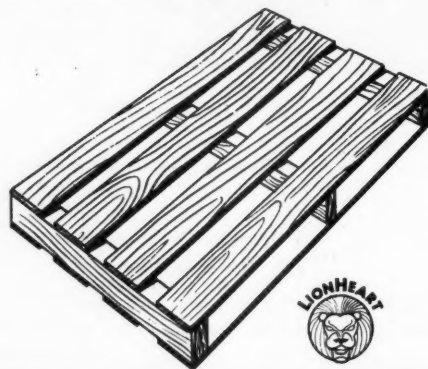


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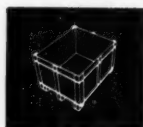
Midget-Sized Tractor— Standard Mfg. & Sales Co.

Here's a small-sized tractor that can be used for a number of purposes where it would not be feasible to

HANDLE MORE MATERIALS AT LOWER COST...



SAVES TIME — SAVES SPACE — SAVES MONEY
Quality made hardwood pallets are designed to meet your material handling requirements whatever the size, shape or product. All sales made direct through company representative. Save the middle man profit. Also pallet boxes, skids, crates, and miscellaneous wooden packaging material.



Address all inquiries to Dept. K.

L & H WOOD MFG. CO.
FARMINGTON, MICHIGAN

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MARCH, 1952 • FLOW

use a large, full-sized tractor. It weighs 210 lbs. and is powered by a Briggs & Stratton 3 h.p. engine. The tractor through a regular automotive-type gear shift transmission and differential — with two speeds forward and reverse. Its length is 50 in., and the width across the rear wheels is 30 in. Clearance under the tractor is 8 in., and height to the top of the steering wheel is 30 in.

Circle No. 194 on Reader Service Card for more information

Two-Way Adjustable Conveyor— Delano Conveyor & Equipment Co.

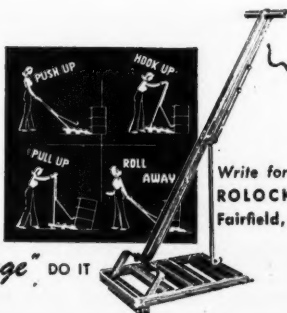
Here's a power driven belt conveyor which is adjustable in both length and height. It's also portable and reversible, and is available in double-ended models. Electric eye controls may be incorporated for power trucks or walking traffic. It can carry loads up to 250 lbs. per unit on the extended boom, or a total load of 1000 lbs. The standard model is 10 ft. long when closed, and 18 ft. extended. Other models, such as the double boom, are 7 ft. closed and 22 ft. open.

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"George"* IS THE PAL OF MAN AND GAL.
WHO HAVE TO DO WITH TOTING.
HE SAVES YOU PAIN AND MUSCLE STRAIN.
A FACT THAT'S WELL WORTH NOTING.

Yes... "George,"* the almost automatic tote box truck... is a pain saver, time saver, and money saver in leading metal working plants.

Operation is simple. Truck is backed up to boxes, hook inserted in box handle. Leverage pull of truck handle glides load over beveled edge of truck onto upper set of rollers. Lower rollers carry truck to destination, easily. No lifting strain... little effort for man or woman. Rugged, long life, low cost. You can use several or many.



*TRADEMARK

Write for free Folder L
ROLOCK Incorporated
Fairfield, Connecticut

LET "George" DO IT

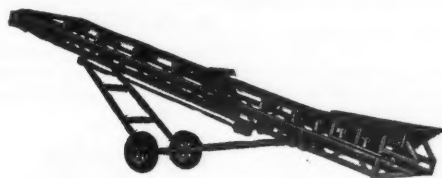
19652
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Delivered PROMPTLY



A typical installation of Sectional Conveyor assemblies "Job-Fitted" to the efficient operation of this aggregate plant.

Today three major factors must be considered in the purchase of material handling equipment—performance, price and **delivery**. Baughman Sectional Hi Speed Job-Fitted Conveyor assemblies are built to meet these specifications. Each Baughman Sectional Conveyor is engineered, thoroughly tested and load rated, insuring satisfaction in every installation. Through quantity production of Sectional Conveyor Assemblies it is possible to stock basic units, which insure prompt delivery at lower cost.



The same sectional assemblies and job fittedness is available in portable and permanent Baughman Conveyors. Speedy quotation, prompt delivery and shipment in most cases from stock, allow Baughman to offer immediate action to your inquiry.

Write for Free Catalog #A-57 or contact your nearest Baughman Industrial Distributor.



manufactured by
BAUGHMAN MANUFACTURING CO. Inc.

118 ARCH STREET
JERSEYVILLE, ILL.
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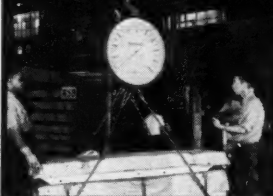
HYDROSCALE

VISIT OUR
A.S.T.E. SHOW
BOOTH NO. 108

HYDRAULIC
ACCURACY



**A RUGGED—COMPACT
CRANE SCALE THAT
PROTECTS YOU AGAINST
LOSS!**



● IN INVENTORY

Avoid transporting heavy bulky material to weighing stations. Speed up the job.

● IN INSPECTION

Scale can be incorporated in tension and load-pulling test equipment.

● IN RECEIVING

Check incoming weights at the dock without delay and extra handling.

● IN PRODUCTION

Prevent overloading equipment. Batch and measure accurately. Foundries load ladles with even mold pours.

● IN SHIPPING

Check parts going out for sub contract work and final shipping weights.

No tie-up of men and equipment common to central weighing station layout. Weighs instantly as you lift the load to move it! Models 500 to 100,000 lbs. Dials 12", 24" and 30". Kilogram dials and other special designs for special work . . . Write for catalog.

HYDROWAY SCALES, INC.

20628 W. 8 Mile Rd., P.O. Box 4754 Detroit 19, Mich.

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142

Barrel and Drum Truck—

Dico Co.

A concavity of the handle shafts on this barrel and drum truck enables it to load bilge drums as well as standard, straight-sided drums. Its retracting under-carriage permits the wheels to remain on the floor during all stages of the handling process. The truck is built of welded tubular material and has forged steel toes. It is designed to stand upright, in a semi-vertical position or horizontally without support.

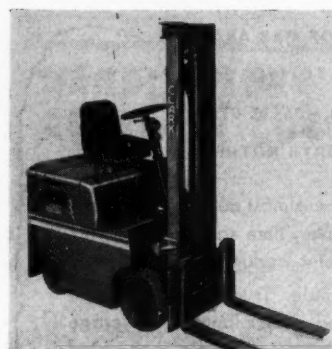


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Fork Truck—

Clark Equipment Co.

Features of the new Clipper electric battery-powered fork lift truck built by Clark Equipment Company include:



increased speed; one ton capacity at 24-inch load center; fingertip directional lever; automatic acceleration. The directional control lever is mounted on the truck's steering column for selection of direction of travel and simultaneous engagement of first point-of-power, Clark

says this makes the operator's work easier, gives him more maneuverability and faster getaway. The automatic acceleration idea cuts out jerking and the possibility of human error. Shifts from one point of power to another are timed automatically in accordance with torque requirements.

Circle No. 197 on Reader Service Card for more information

Plastic Protective Coating—

Samuel Moore & Co.

Carbon steel conveyor rollers can be rendered impervious to the effects of moisture, salt, acids, alkalis or other corrosive atmospheres with Dekoron plastic armor coating. The manufacturer also makes plastic

MARCH, 1952 • FLOW

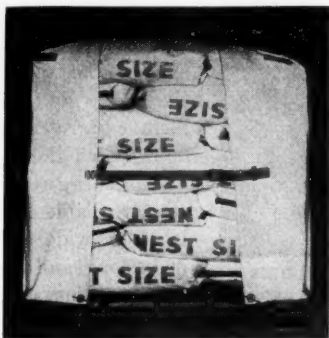
armored conveyor rollers of steel tubing, over which the plastic coating is extruded. The thickness and composition of the plastic armor can be varied to suit practically any condition, although a semi-rigid vinyl coating approximately 1/32 in. thick is most often used.

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Canvas Pallet Binder—

Roger L. Toffolon

For unit load handling and shipping of fragile and bagged commodities which do not lend themselves to

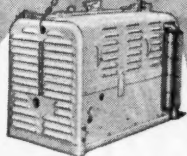


binding with steel strapping, these canvas pallet binders can be applied and the load secured without tools in less than five minutes by average workers. The load is secured and protected by the canvas binder, the canvas webbing and the steel cables which possess a shock absorbing flexibility.

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PREVENTIVE MAINTENANCE eliminates truck downtime

**READY-POWER
IS BEST FOR
PREVENTIVE
MAINTENANCE**



Tie up a truck because of power failure? Never! Equip your fleet with interchangeable Ready-Power gas-electric units and, then, have one extra for the shop. Thus, power units can be rotated for preventive maintenance . . . and your trucks stay **ON THE JOB.**



Your Truck Is No Better Than Its Power!

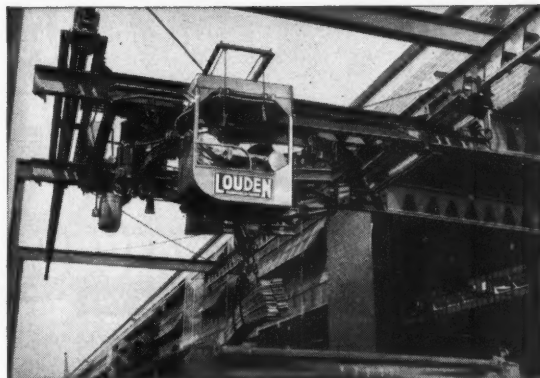
The READY-POWER Co.

3838 Grand River Ave., Detroit 8, Michigan
Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

Circle No. 126 on Reader Service Card for more information

FLOW • MARCH, 1952

UNLOADING OR LOADING CARS WASTING YOUR MEN & MONEY?



Louden

**OVERHEAD HANDLING OFTEN
PAYS FOR ITSELF IN A FEW**

**MONTHS BY LETTING 2 OR 3 MEN DO WORK
OF A SLOW AND COSTLY "BULL GANG"**

Getting things in and out of your plant a problem? Labor hard to find and hard to keep? Handling too slow; machines down time and again waiting for raw stock or parts? Labor costs and demurrage charges driving you mad? You need a Louden Crane like the one shown here . . . hundreds of plants have found them the perfect answer to their railroad siding problem. And many use them to load and unload open body trucks as well as gondola and flat cars.

Loading docks can be eliminated entirely because materials received can be moved directly to warehouse or start of fabrication on the overhead tracks, to any location inside building. Conversely, such a system can deliver finished products into waiting cars or trucks without intermediate handling. Length of runway can cover entire siding or truck lane, if desired. Design can meet any need for weight or bulk. Ask a Louden engineer about your problem. Wire or write now.

FREE ILLUSTRATED BOOK

Case histories telling how Louden Handling Systems have saved time and money for widely different kinds of industries are described and pictured in a new 56-page book called, "Economical Material Handling". Write for it.



THE LOUDEN MACHINERY COMPANY

5114 S. Court St., Fairfield, Iowa

Louden

OVERHEAD MATERIAL HANDLING

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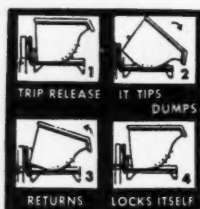
143

Use Self-Dumping Containers



—they pay for themselves

Step-Up PRODUCTION



**50%
SAVE TIME
and LABOR
with**

ROURA Self-Dumping **HOPPERS**

**SIMPLE — SAFE — SPEEDY
MATERIAL HANDLING**



**Only ROURA Has the Exclusive
Instant Release (Patent Pending) Handle**

Handling wet or dry, hot or cold, bulky materials quickly and easily, the ROURA is simple to operate—only one man is required for distributing and unloading—and he does this in much less time than ordinarily required under old-fashioned manual methods. Thousands of Roura Hoppers (which fit any standard fork or platform lift truck) are in constant daily operation, serving and saving for such firms as Owens-Illinois Glass, Corning Glass, National Fireproofing, General Motors, Ford, Chrysler, American Brake Shoe, General Electric, Westinghouse, Western Electric, American Steel Foundries, International Harvester, John Deere, etc.

By a simple lift of the exclusive release handle, the ROURA HOPPER dumps, rights and locks itself securely. Sizes— $\frac{1}{4}$, $\frac{3}{4}$, 1, $1\frac{1}{2}$ and 2 cubic yards; the ROURA HOPPER can also be designed for flat trucks and in other sizes to meet specifications. Also, it can be equipped with special flanges that permit stacking to desired tiers for storage or future distribution of materials—conserving valuable floor space. Priced below all competition, the ROURA will quickly pay for itself many times over.

**— Can Be Coated With Acid-Resistant Paints
Write today for detailed brochure, "In Dollars & Sense."**

ROURA IRON WORKS, Inc.

1411 Woodland Ave.

Detroit 11, Mich.

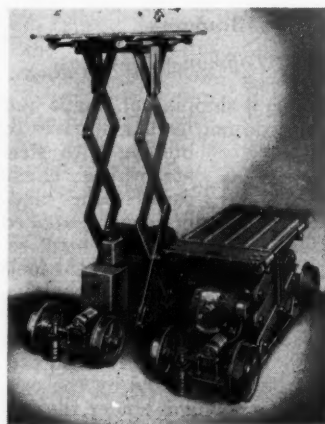
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Elevating Table on Tracks—

The Hamilton Tool Co

These special elevating tables operate on tracks, are moved manually from station to station, and are elevated electrically.



Specifications include the following: scissor-type lift mechanism is operated by 1 h. p. elevator type motor; motor is actuated through foot control from either end of the table; electrical controls include gear driven limit switch and reversing magnetic starter. Table size is 24 in. wide and 36 in. long, and top is free rolling, conveyor-top. Lift is

from 24 in. to 64 in. above floor level, and lift rate is 40 in. per minute. Load capacity is 600 lbs.

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**Easily Handles
Hard-to-Handle Materials**

Clamp arms with replaceable jaw tips (for long life) grip box firmly. Clamps are opened for release and closed for gripping with a convenient foot pedal. Models for all types of box handling. Equipped with rubber-tired ball-bearing wheels. For bulletins address Dept. I.

**FOOD MACHINERY AND CHEMICAL CORPORATION
PACKING EQUIPMENT DIVISION
NM-9
Riverside, California • McAllen, Texas**



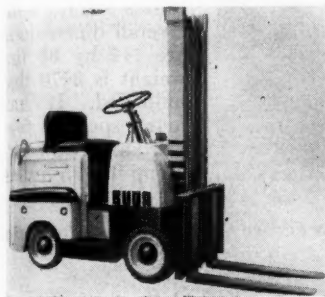
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MARCH, 1952 • FLOW

Fork Truck— Buda Co.

Special features reported for the Buda FT series of fork trucks recently introduced include: All roller construction mast with special rolled mast channels; two speeds forward and two speeds reverse single lever gear shift; quick change heavy duty clutch; complete complement of electrical gauges on full front vision instrument panel; carriage mounted on adjustable side thrust rollers to reduce wear; complete accessibility of all parts for maintenance and servicing; and standardization and interchangeability of parts between all models. They are available in five standard masts with a 72 in., 84 in., 108 in., 114 in., or 120 in. lift.

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TRAFFIC NEVER STOPS



when you repair your floors with PERMAMIX.

Easy to apply—sets instantly—long wearing for year around use indoors or out—WILL NOT FREEZE—can be stored indefinitely and used in any temperature—lowers maintenance costs amazingly.

Here's all you do: Clean hole in any type floor, spread primer supplied in drum, fill in with PERMAMIX, tamp and dust with cement or floor dust, resume traffic immediately. It's that easy, for PERMAMIX feather edges and no cutting or chipping is required. No skilled labor is necessary, you need no special equipment, you have no mixing, waiting or production delays when you repair or patch your floors the easy, fast PERMAMIX way. Comes in handy, durable 50 lb. net weight drums.

See us at Booth No. 43-N at the National Railway Appliances Show, Chicago Coliseum March 10-13.

Write or call for
full details

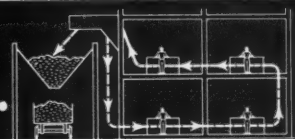
PERMA Mix

PERMAMIX CORPORATION

226 N. La Salle St. Cent. 6-1785 Chicago 1, Illinois

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upstairs...
downstairs...



ALL AROUND YOUR PLANT— Hapman TUBULAR CONVEYORS can carry flowable materials at tremendous savings!

CONVEYS CAST IRON DUST



GOES THROUGH PLANT HERE,
dodging all obstacles...



DISCHARGES OUTSIDE HERE
...into hopper or rail car

IF YOU HANDLE
flowable materials similar to any of these
PRODUCTS:

Bulk Chemicals: (Wet dry, abrasive, corrosive, radioactive)

Food: Starch, flour, malt, grain, coffee or
BY-PRODUCTS:

Metal Chips from machine tools...

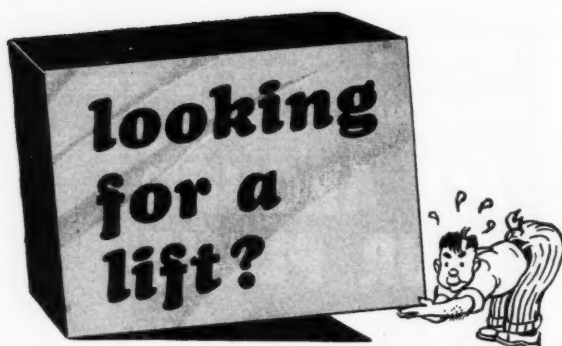
Sludge from quench tanks or grinding wheels...

Coal or clay, etc.

YOU MAY REAP ENORMOUS SAVINGS—
some of America's most cost-conscious firms are doing it—with plant-wide systems of Hapman Tubular Conveyors. The list of materials you can handle is almost endless. You gain great advantages, both mechanically and in terms of labor saved. The stakes are high—why not investigate now? Write today for Bulletin F-352.

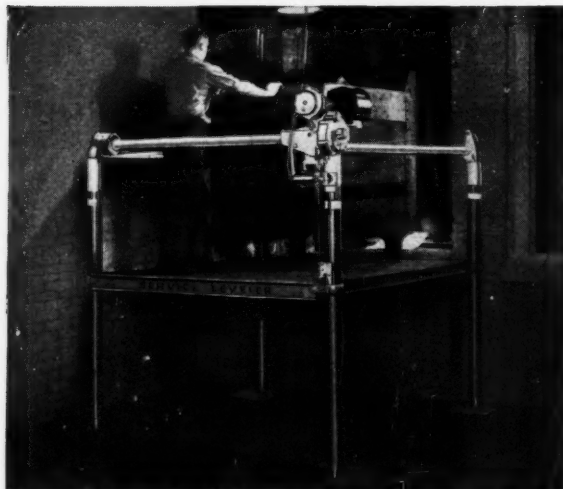


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NEW SERVICE *Leveler*

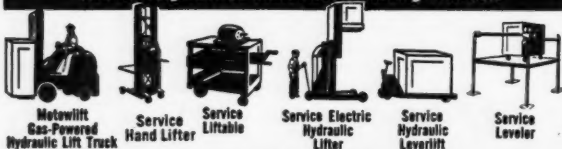
LIFTS 3 TONS 5 FEET IN
LESS THAN A MINUTE



Now, lift heavy loads from one level to another safely and easily with the new SERVICE LEVELER. This versatile unit powered by a rugged, dependable, fully-enclosed, 1-horsepower electric motor—lifts as much as 6,000 pounds as high as 5 feet in less than a minute. Maximum safety is assured by: positive motor cut-off stops; automatic top and bottom limit stops; convenient manual control of stops at intermediate heights; post guard rings; slack cable shut-off; and centrifugal safety governor.

Only a few hours are needed to install the new Service Leveler . . . anywhere, at an amazingly low cost. No sub-surface installation required. Write today for detailed specifications. Prompt Delivery.

Cost-Saving Service Materials Handling Products



SERVICE CASTER & TRUCK CORP.



Executive Offices: Albion, Michigan
Plants at Albion, Michigan and Somerville 43, Mass.
Representatives in all Principal Cities

Circle No. 132 on Reader Service Card for more information

Bulk Material Handler—

Getman Brothers Mfg. Div.

Designed to handle practically any type of bulk material, this Scoot-Crete can move loads up to 4000 lbs. Special-sized boxes can be engineered to specifications. Wheelbase is 6 ft., and turning radius is 6 ft., 4 in. Overall dimensions are 112 by 66 in., weight is 2270 lbs. unloaded. It has four speeds forward and can travel up to 15 miles per hour.



Circle No. 202 on Reader Service Card for more information

Pneumatic Scale—

Fluid Controls Co.

Fluid Controls Co. has announced a completely pneumatic scale for either batch weighing or continuous process control. It accurately converts a variable force or weight into an easily measured pneumatic signal. It will indicate record, or control weight or force through standard instruments in the manner commonly applied to temperature, flow, pressure, and



Store and handle bulk materials the low cost, modern MARIETTA way.

Chemicals, grains, fertilizers, wood chips, coal, sand, gravel . . . any bulk material that requires safe, low-cost storing and handling, needs Marietta protection.

Marietta Air-Cell concrete stove construction gives you tanks that are wind and fire proof . . . air-tight . . . permanent . . . maintenance-free . . . keep valuable contents DRY and SAFE . . . reduce waste.

Each Marietta storage system is designed to solve your particular storing and handling problem. Our trained erection specialists will quickly turn these designs into tanks ready for filling . . . give you low cost, efficient storage facilities.

Write or wire for full details.

the MARIETTA CONCRETE corporation

MARIETTA, OHIO

Branch Offices: Rose Rd. & Pulaski Hwy., Baltimore, Md.; Box 1575, Charlotte, N. C.

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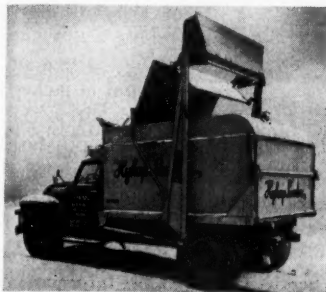
level problems. A unit capable of weighing up to 10,000 lb. occupies less than one cubic ft. of space. Sizes are available to weigh up to 40 tons directly and higher on special order.

Circle No. 203 on Reader Service Card for more information

Versatile Loader—

Efficient Equipment, Inc.

Adjustable to any size dump truck, this loader consists of an attachable shovel or magnet, arms and hydraulic equipment.



It can be used as a hydraulic lift platform for loading drums, bales, crates or shop-box containers. The loader is mounted on the rear of the truck body and is operated by controls on the top of the truck cab or from auxiliary controls on the side of

the truck. The hydraulic arms of the loader work directly off the power takeoff of the vehicle itself.

Circle No. 204 on Reader Service Card for more information

Circle No. 134 on Reader Service Card for more information

DETECTO SCALES

There's a precision-accurate Detecto Scale for your specific weighing and counting need. The Detecto helps increase production, yet assures you maximum accuracy by making slightest weight discrepancies immediately visible.

DETECTO-GRAM HEAVY DUTY SCALE

To speed up heavy duty weighing operations, Detecto-Gram Scale Model #1744 insures against overweight losses. Shows weighing error promptly. Famous for hair-line accuracy.

Write for literature



DETECTO • SCALES • INC.

MAKERS OF FINE SCALES SINCE 1900

543 W. PARK AVENUE • BROOKLYN 5, NEW YORK

SCALE ENGINEERS IN ALL PRINCIPAL CITIES

Can you use 50% or MORE STORAGE SPACE?



STEEL, LUMBER, PIPES or PALKETS

... whatever your materials handling problem, it will pay you to investigate Lull Traveloader. You will be amazed to see how many jobs this versatile one-man machine can do!

Make extra space with the LULL

Hydraulic Traveloader

Traveloader design and operation work three ways to increase storage space and speed materials handling:

1. All loads are picked up from the side. Loads are quickly accessible . . . aisle widths reduced.
2. One man operating finger-tip controls in comfortable Traveloader cab, quickly loads, carries, unloads or stacks up to 12'.
3. Long materials are handled lengthwise. You need only narrow 10' aisles . . . gain additional storage capacity.

Lull Traveloaders have capacities of 10,000 lbs. and 15,000 lbs. . . travel at speeds up to 30 MPH . . . are available with fork, crane, reel and other time saving attachments.

WRITE TODAY for amazing Traveloader story!

Ask for Bulletin No. AD-30 A

LULL Manufacturing Company 346 West 90th St. • Minneapolis 20, Minn.

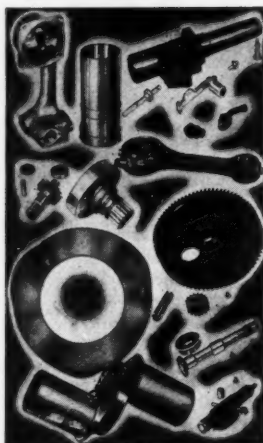
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Cable Address: "REPRINT"

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FLOW • MARCH, 1952

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**... are ENGINEERED
for safe, low cost
handling, regardless of
shape of parts**

These "Carriers" are not stock items. They are designed and built on order after experienced analysis of the specific suspension and handling problem involved. Man-hour savings, reduced repair costs, and improved production amortize the cost of these "Carriers" rapidly. Send sample part and production data for recommendations.

Circular on Request



*"If it's made of wire,
we can make it"*

**SPECIALISTS
IN MEANS OF
SUSPENDING
MACHINED
PARTS**



MID-WEST WIRE PRODUCTS CO., INC.

JERRY GERALDS, President

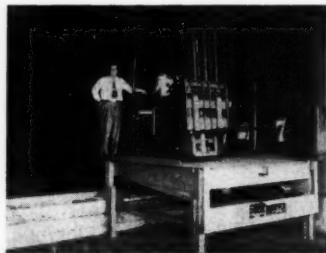
FENKELL AT LINWOOD

DETROIT 21, MICH.

Custom-Built Ramp—

William Ehlers

If you're faced with the problem of loading and unloading trucks at an unusually low platform, this hydraulic ramp may be the answer. It's custom-



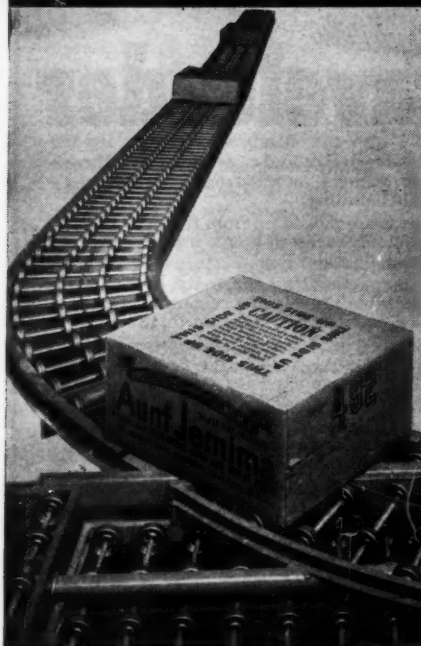
built to meet individual requirements and is a self-contained unit. An extendable and retractable gap-plate prevents damage to either truck or load, and is jacked forward after the

truck has been properly spotted. Hydraulic pressure is obtained through a double-acting hand pump, and no wiring or plumbing is required. Capacity of the ramp is 10 tons.

Circle No. 205 on Reader Service Card for more information

**FOR DETAILS ON ANY ITEMS
USE THE READER
SERVICE CARD BOUND
IN THIS ISSUE . . .**

**Ask us how *SPEEDWAYS*
help you compete for new business**



SPEEDWAYS LOW COST CONVEYORS

*Speed up production and
lower your handling costs*

If high costs are preventing you from successfully bidding for new business, let us show you how a SPEEDWAYS system can help place you in a strong competitive position. Call your local SPEEDWAYS distributor — or write us — for the facts!

- SPEEDWAYS Gravity Wheel Conveyors
- SPEEDWAYS Gravity Roller Conveyors
- SPEEDLIFT Portable Power Belt Boosters
- SPEEDBELT Assembly Conveyors

SPEEDWAYS Conveyors, Inc.

1242 Niagara St., Buffalo 13, N. Y.

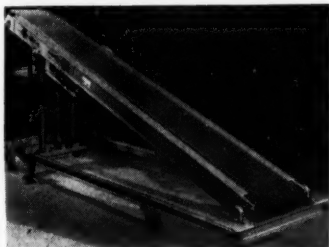
Also Mfd. in Canada; Union of So. Africa

Circle No. 137 on Reader Service Card for more information

Portable Loading Dock—

Speedway Conveyors Inc.

A portable loading dock suitable for heavy or light merchandise has been developed by Speedways



Conveyors, Inc. It was designed specifically for firms without loading docks and with problems in loading and unloading trucks, freight cars or vans. It is said to be easily portable or locked into position. Hydraulic adjustment mechanism enables conveyor to be adjusted to any truck or car level height. The lower end has been designed so that cartons or crates can be wheeled up on end by hand trucks and guided over and onto the belt.

Circle No. 206 on Reader Service Card

MATERIALS HANDLING COST REDUCTION

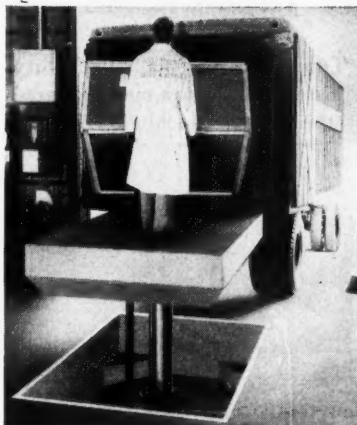
Take the guess work out of your Materials Handling.

A preliminary survey without charge, backed by the authority of our 24 years experience, will be an eye-opener to you.

Gemar Associates
CONSULTING
MATERIALS HANDLING
ENGINEERS

Greenwich, Connecticut

Circle No. 139 on Reader Service Card for more information



**Easy way
to lift
heavy loads**

■ Use economical Oilhydraulic power to lift loads directly from plant floor to trucks, freight cars, machines or different building levels. Rotary Levelators speed plant traffic, conserve manpower, cut costs. Save plant space, too . . . no need for loading

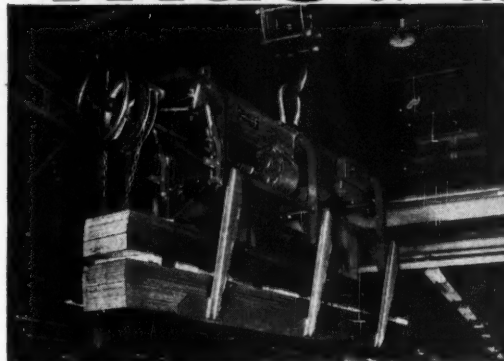
dock and ramps. Plant floor can be poured at grade. Safe, dependable, economical operation by compressed air or small electric power unit. Capacities up to 80,000 lbs. Installation simple and inexpensive. For complete data, write for Catalog RE-201.

ROTARY LIFT CO., 1139 Kentucky, Memphis 2, Tenn.

Rotary

LEVELATOR LIFT

Wide or Narrow...



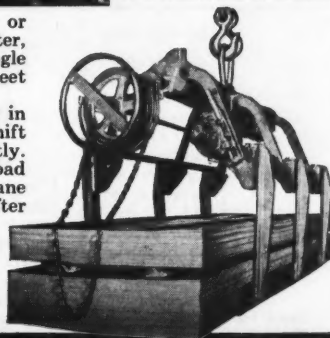
**1 C-F
LIFTER
HANDLES
THEM ALL**

Whether your production requires a few or many widths of sheet steel, 1 C-F Lifter, with its wide range of jaw and carrying angle adjustments will probably meet all your sheet handling requirements.

Adjustments are made by the operator in a few seconds, permitting the Lifter to shift from wide to narrow sizes almost instantly.

Because it can pick up, carry and unload more loads per hour, using less man and crane time than any other method, a C-F Lifter will soon pay for itself.

Bulletin SL-28 gives you the complete story of C-F Lifter advantages to you. Ask for it today. There's no obligation.

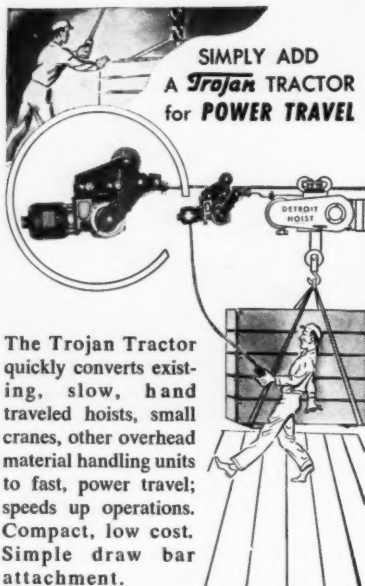


CULLEN-FRIESTEDT CO.

1320 South Kilbourn Avenue • Chicago 23, Illinois

Circle No. 140 on Reader Service Card for more information

Circle No. 141 on Reader Service Card



The Trojan Tractor quickly converts existing, slow, hand traveled hoists, small cranes, other overhead material handling units to fast, power travel; speeds up operations. Compact, low cost. Simple draw bar attachment.

Mail this ad or the coupon for more information and Bulletin 810.

DETROIT HOIST & MACHINE CO.
8211 Morrow St., Detroit 11, Mich.

Company _____
Address _____

Adjustable Docks— Loomis Machine Co.

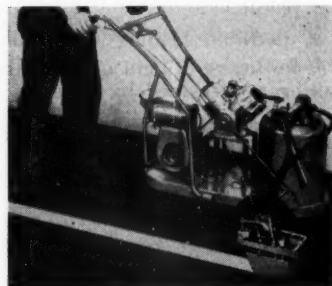
Three sizes of small, light-duty adjustable docks are manufactured by the Loomis Machine Co. Trade



name is Rite-Hite Loading Docks. Illustrated here are a 10,000 lb. capacity dock which is 42 in. wide, a 20,000 lb. dock which is 42 in. wide, and a 20,000 lb. dock which is 72 in. wide. Manually operated, the docks have a counterbalance feature which permits placing the dock plate in any position when it is not in use. When in use, it is lowered to the floor of the carrier. The counterbalance construction assures positive contact with the carrier at all times, according to the manufacturer.

Circle No. 207 on Reader Service Card

Line Marker— Universal Mfg. & Sales Co.



A flexible paint guide has been added to the Econo-Liner line marker of the Universal Manufacturing and Sales Co. The guide permits the machine to follow the surface contour when painting on concrete, wood block, black top or brick. Rough surfaces present no problem in achieving sharp, clear lines reports the manufacturer. Capacity is about 10,000 ft. of line per hour in widths varying from two to six inches.

Circle No. 208 on Reader Service Card

MOVE WITH ASSURANCE! MOVE WITH . . .

marforge



Load-Mobile Fork Truck

Also available as Lift Truck, Freight Truck, Pallet Truck, or Tractor.



Load-Veyors

Lightest weight steel conveyors. Exclusive rail arrangement prevents small packages from falling off. Strong, patented grid construction supporting ball bearing wheels on both sides.



Load-Lift

Scientifically designed for easy movement and dependable performance in heavy service.



Load-Carriers

Standardized trucks readily converted to meet every materials handling requirement. Remove or add accessories according to changing needs.



Load-Pacs

(Packaged Running Gear for Trucks). Make your own trucks — any size; any style (box, bin, or shelf). SAVE delay — freight — maintenance.



Dye House Trucks

Designed to facilitate draining and resist corrosive action of chemicals. Easy to clean.

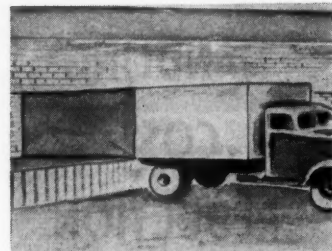
Send for the complete illustrated catalog. We will be glad to furnish information on special requirements. Dept. M H 30 Garvey St.

Market Forge Company
EVERETT 40, MASSACHUSETTS

54 Years in the Materials Handling Industry

Circle No. 142 on Reader Service Card for more information

Loading Dock Cover— Standard Arm Co.



Protection from all kinds of weather is provided by the Accord-yun Loading Dock Cover of Standard Arm Co. The cover is fastened to the building wall at the loading dock, and when opened, completely covers and overlaps the rear end of the truck on both sides and top, as well as the platform. It is designed to slide into railroad freight car doors. When closed, it folds flat against the wall of the loading dock. Opening and closing are performed by air pressure and timing is adjustable to individual requirements.

Circle No. 209 on Reader Service Card

"Weld-Bilt"

EQUIPMENT GIVES YOU LONGER SERVICE IN LABOR-SAVING MATERIALS HANDLING

You can SEE the greater strength and durability in WELD-BILT Equipment... in heavier arc-welded construction, in sturdier operating parts, in many innovations that assure easier, friction-free operation. Every piece of "Weld-Bilt" equipment is designed to save operator fatigue, protect product and save money both on original cost and maintenance expense.

"Weld-Bilt" PRODUCTS

PLATFORM TRUCKS. Spring-Bearing equipped for product protection and easy moving over rough floors.



PALLET-TYPE HYDRAULIC LIFT TRUCKS. Save time in handling single, double-face pallets up to two tons.



TWO-WHEEL HAND TRUCKS. Spring-Bearing equipped to save on floors and trucks.



HYDRAULIC LIFT TRUCKS. Built for easier, faster moving, effortless operation.



SKID PLATFORMS Standard and special designs for all needs. Extra-strong REPLACEABLE floors.



PORTABLE ELECTRIC ELEVATORS for space-saving storage.



Write or wire for prices today... or for engineering assistance on your handling problems or plans.

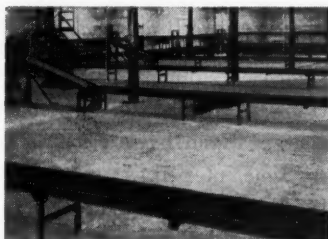
**WEST BEND
EQUIPMENT CORP.
MATERIALS HANDLING
ENGINEERS**

335 Water Street, West Bend, Wis.

Belt Conveyor—

Standard Conveyor Co.

From standard Handidrive Units made by Standard Conveyor Co. you can build a complete conveyor

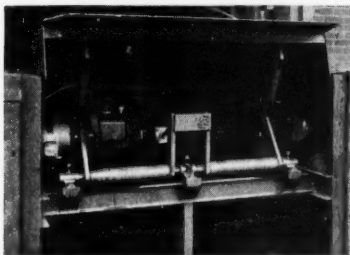


system, to suit your requirements. Either a single conveyor or a complete flow system can be assembled with the various units. Belt, live roller and roller gravity conveyors are offered in five standard widths: 10½ in., 14½ in., 16½ in., 20½ in., and 26½ in. between channel side rails.

Circle No. 210 on Reader Service Card



BEACON



FULL HYDRAULIC PACKAGE UNIT DOCK RAMP

A self-contained full hydraulic dock ramp complete with individual motor pump unit. May be installed within the dock area in a prepared pit or in front of an existing dock as illustrated. Unit has 24" of vertical movement and full floating action in use. May be equipped with foot operated mechanical, or electric push button control.

Beacon manufactures a complete line of power operated dock ramps from simple air operated units to our new 4-movement hydraulic dock ramp.

Consult our engineering department for any hydraulic or air material handling problem.

BEACON MACHINERY, INC.
P.O. BOX 188, EAST ST. LOUIS, ILLINOIS

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Plan to use the best...

... whether you are designing or fabricating new equipment, maintaining or rebuilding old equipment, it will pay you well to use the best. And, to get the best... specify Albion Industrial Casters. They are your guarantee of caster perfection at a price that's amazingly low.

And more... they are immediately available in any size, style, capacity—swivel or rigid types, in sets or in thousands to suit your needs.

If you want a better caster... an economical caster, why not contact your local A.I. representative or write direct, 'phone or wire Albion's caster engineers? They will be happy to serve you—

**ALL ALBION CASTERS are
Engineered for the Job!**



Series Eleven
"All-Purpose"
SWIVEL CASTERS
(Rollite Wheels)

Write Today for your free copy of
Albion's 1952 illustrated caster
catalog. It's yours for the asking!



**ALBION
INDUSTRIES, Inc.**
Albion, Michigan

Represented in Canada by:
C. J. McDONALD, 265 Yonge St., Toronto, Ont.
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FLOW • MARCH, 1952

GOOD TACKLE BLOCKS

*Protect your
wire rope
INVESTMENT!*

**MADESCO
MAKES GOOD BLOCKS**



Write for complete
information today.



Over a quarter century of service

Circle No. 146 on Reader Service Card

152

Battery Charger— Bart-Messing Corp.

More than one battery can be charged at one sitting by an automatic battery charger built by Bart-Messing Corp. The new charger for trucks and other industrial vehicles is equipped with a tandem transfer control which connects the charger to one battery for the preset time interval. At the termination of this time the charger automatically disconnects from the first battery and connects to the second. When the last battery has been charged, the unit completely shuts down. Output of the charger is fused for protection against possible shorts. Units occupy a four ft. square area, stand four ft. high. Maintenance consists only of periodic cleaning of rectifier plates to prevent restriction of cooling air.

Circle No. 211 on Reader Service Card

Shuttle Car— General Electric Co.

A cable-reel crawler-type steel-track shuttle car for mine application and with a turning radius of 14 to 16 ft. has been announced by the Locomotive and Car Equipment Dept. of General Electric Co. Because no clearance is required for turning wheels, a wide conveyor is built into the body of the track-laying car. It can turn by locking one track completely. A wide conveyor permits increased unloading speed.

Circle No. 212 on Reader Service Card

**For Details On
Any Items Use The
Reader Service
Card Bound In
This Issue . . .**

K&J for TRUCKS and Casters



One dependable source for 2 wheel trucks, platform trucks, trailers. Units for loads to 50 tons. Wood or steel construction. All accepted bearing, wheel, and caster combinations. Built with high overload factor for low maintenance.

Get the same dependable quality and value in K&J casters. All standard designs, bearings, wheels, 175 lbs. to 1 ton capacity. Write for details.

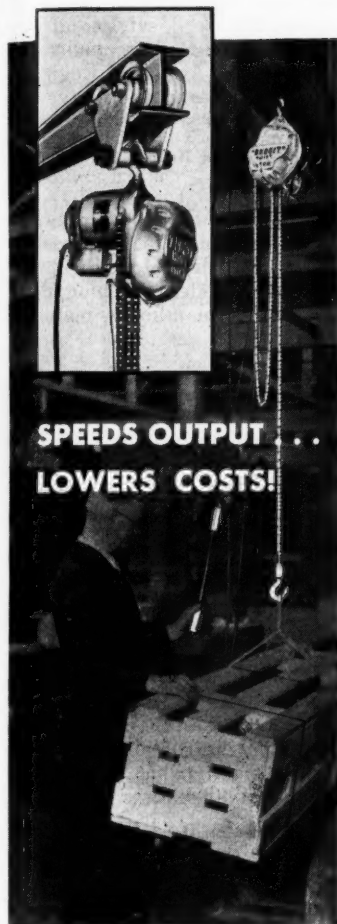


THE KILBOURNE & JACOBS MFG. CO.
COLUMBUS, OHIO

Circle No. 147 on Reader Service Card

MARCH, 1952 • FLOW

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**SPEEDS OUTPUT ...
LOWERS COSTS!**

That's exactly what the 'Budgit' Electric Hoist is doing in thousands of plants. It enables workers to produce more at lower unit cost.

Let the 'Budgit' step up your defense and civilian production. It's a complete, portable hoist—safe and easy to use. Costs nothing to install. Just hang up, plug in, use! Uses little current. Capacities from 250 to 4,000 lbs. A. C. and D. C. models. Priced from \$119. Write for a copy of Bulletin No. 391 for complete information.

'BUDGIT' CORD REELS . . .

Keep conductor cords of hoists, portable tools, or mobile devices, having motors up to and including 1 H.P., taut and up out of the way.



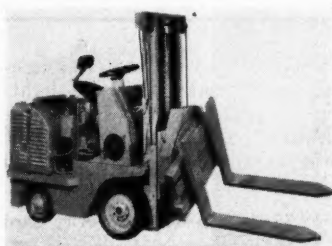
**'Budgit'®
HOISTS**

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, and 'American' Industrial Instruments.

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FLOW • MARCH, 1952

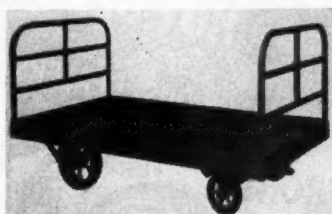
**Revolving Head—
Baker-Raulang Co.**



A Rollover-Clamp has been designed for use on 4000-lb. capacity Baker fork trucks. With it, material may be handled on the forks in standard fashion, skid boxes may be dumped with the rotating head, or the forks may be used as clamps or handling miscellaneous objects. A 4000-lb. fork truck outfitted with this rollover-clamp will handle loads up to 2400 lb., 48 in. long. The truck has a telescoping lift to 126 in. and a nested height of 83 in.

Circle No. 213 on Reader Service Card

**Steel Trailer—
Market Forge Co.**



Bagged material is safely and easily handled on this all-steel medium duty trailer made by Market Forge Co. The smooth steel construction with rounded corners and edges prevents bags and other materials from being torn. Each end is equipped with removable tubular racks which are also carefully welded to prevent injury to material. There are loops on each side for diagonal-type coupler rods which permit backing without "jack-knifing." Capacity is 3000 lb., length is 69 in., width is 36 in., height of end racks are 23 in., and height of the deck from the floor is 14 in.

Circle No. 214 on Reader Service Card

A 6000-LB. LIFT!

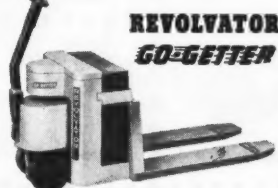


**at a touch of Suzy's
featherlight
fingertips!**

Yes, *Fingertip Control* on the new Revolvator Go-Getter enables anyone to pick up a wacking big lift-and-carry load. *Anyone!*

Think what this means in the face of rapidly increasing work-costs; in terms of reducing occupational-accident hazards. You don't need skilled labor—husky muscle-men—to operate *Fingertip Control Revolvators*.

This control feature and many more are exclusive with the Revolvator Go-Getter electrically-operated pallet-type truck, which hydraulically lifts a full four inches in four seconds. It lowers loads just as gently...smoothly...quietly as it lifts. Positively braked with deadman safety control. Comparable, practically, to the way little Suzy handles her doll carriage, but a whole lot surer and faster.



Smoothly turns with no steering push-and-pull, up to a full 200° arc, within its own length. 2 and 3-ton models.

REVOLVATOR CO.

*Designers and Manufacturers
of Materials Handling
Equipment Since 1904*

Revolvator Co.
8739 Tonnelle Ave., North Bergen, N. J.
Gentlemen:

We want to know, without obligation, all about Revolvator Go-Getter *Fingertip-Control Lift Trucks*.

Name _____
Position _____
Company _____
Address _____

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153

MERRILL MATERIALS HANDLING DEVICES

4
SIZES



LIFTING CLAMP



3-M-1

MERRILL BROTHERS
56-35 ARNOLD AVENUE
MASPETH, N. Y.

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LITERATURE AVAILABLE FROM ADVERTISERS

(Continued from page 56)

You can stop your material handling profit leaks by using lightweight, portable Belt conveyor equipment, according to The Belt Corporation. Their literature will show you how.

Circle No. 114 on Reader Service Card

The Coffing Hoist Company would like to prove how you can save on hoist maintenance with its electric and spur-gear hoists. Further information is available.

Circle No. 9 on Reader Service Card

Plant efficiency starts with good housekeeping, says the Bigelow-Garvey Lumber Company, and that includes their collapsible pallet boxes. They'll send you complete details.

Circle No. 4 on Reader Service Card

BRONCO'S
got a **HOT DEAL**
for
"INDUSTRY-IOUS" DEALERS

BRONCO
INDUSTRIAL
WHEELS

with the tire
that
won't roll off!

We want to add a select group of dealers to represent us throughout the country. Bronco wheels are being successfully sold by our present dealers and are being specified by many large companies. They are strong, light weight aluminum alloy. A variety of molded-on rubber tires and complete selection of bearings is available. Sizes from 5 x 1½ to 16 x 3½ inches overall.

If you have a place in your line for a top quality industrial wheel, please write us today.
Original Equipment Manufacturer inquiries invited.

BRONCO RUBBER PRODUCTS CO.
733 STANFORD AVENUE
LOS ANGELES 21, CALIFORNIA

Circle No. 151 on Reader Service Card

You can get speed, safety and savings with a Lo-Hed car puller, according to the American Engineering Company, and they have full information to show you how.

Circle No. 33 on Reader Service Card

The Stanley Works, Steel Strapping Division, has records to show how the Stanley Steel Strapping System and modern shipping methods can save man-hours, materials and money.

Circle No. 84 on Reader Service Card

The hidden cost of material handling can be the difference between profit and loss, and the catalog offered by the Fibre Specialty Mfg. Co. may show you how to reduce these costs with their trucks, trays and tote boxes.

Circle No. 23 on Reader Service Card

The Towmotor Corporation invites you to take a "mechanic's eye view" of their lift trucks to learn the things that are important for low-cost maintenance. More information is available.

Circle No. 53 on Reader Service Card

If you want pallets and boxes that will give you years of hard usage, according to Supreme Manufacturing Co., their Ozark Master line will suit your needs. They will send you details.

Circle No. 79 on Reader Service Card

Safety and riding comfort are two of the features of the Milsco foam rubber cushion seat. Milsco Mfg. Co. will send you all the details.

Circle No. 115 on Reader Service Card

An eight-page illustrated catalog showing the mechanical features of the Cesco Dumper and its various uses for lifting and dumping bulk or packaged material is available from Colson Equipment & Supply Co.

Circle No. 8 on Reader Service Card

The Hyster 20 lift truck comes in six model variations, and has a capacity of 2000 pounds. The Hyster Company will send you literature on this truck, as well as on its complete line.

Circle No. 39 on Reader Service Card

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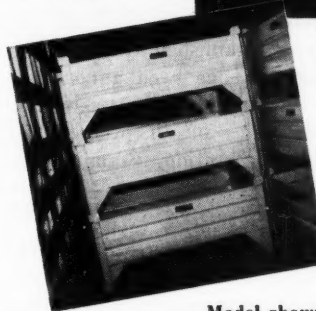
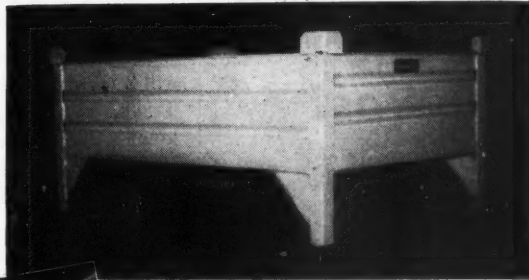
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Herman CORRUGATED BOXES

FIT...

into your
over-all
Profit
Picture



- ★ Designed for Interplant Transportation
- ★ Designed for Production Line Use
- ★ From Machine to Machine operations

Take the costly piece by piece handling out of your profit picture. Speed production, save labor—use boxes fabricated from heavy gauge corrugated steel. In many standard sizes or custom built to fit your job requirements.

These rigid, extra strength containers speed the flow of small parts from stock, carry unit loads, stack safely for on-the-spot easy to reach positions or truck movement between plants.

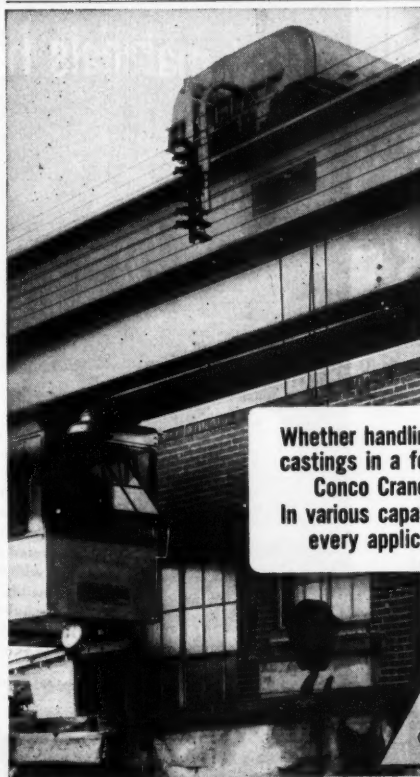
Model shown 24" x 36" x 12" deep

Available with round or square corners



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GRAND RAPIDS, MICH.



First
for
Performance

Whether handling steel in the yard, castings in a foundry, or servicing a machine shop, Conco Cranes rate first for performance. In various capacities and spans, a type for every application. Write for details.

CRANES HOISTS

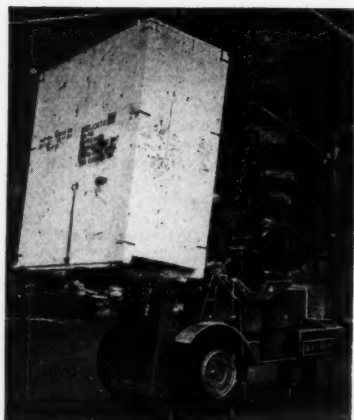
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Silent Hoist LIFTRUK
available in 5-7½-10 ton
capacities.

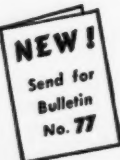
The heavy-duty "Silent Hoist"
Fork LIFTRUK is engineered
to reduce Materials Handling
costs and operations!

More Lifting Power . . . more
Carrying Power . . . means *bigger*
loads, *heavier* loads and
fewer trips.

Faster unloading, more effi-
cient inter-plant handling and
higher stacking, quicker out-
loading to Truck, Trailer or
R.R. Car means a job well done
and at savings very often up
to 75%!

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**NEW BULLETIN
No. 77**



Write for facts regard-
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Original Features that
put Fork LIFTRUK
in the lead for *long*
service and *lower*
maintenance costs.

SILENT HOIST & CRANE CO.
Pioneers of Heavy Duty
Materials Handling Equipment

888 63rd ST., BROOKLYN 20, N. Y.
Circle No. 154 on Reader Service Card
156

SALES FIELD . . .

(Continued from page 30)

will include **Walter H. Stiemke**, Trackson president, and the following Caterpillar officials: **William Blackie**, **Ralph M. Monk** and **J. R. Munro**.

● The appointment of **Louis S. Kimball** as president of the recently re-established Angier Sales Corporation has been announced. The corporation will be responsible for the sales of all products of Angier Corporation, Framingham, Mass.

● The Samuel Olson Manufacturing Co., Inc., Chicago, has announced the appointment of **Robert Abel & Co., Inc.**, 610 Newbury Street, Boston, Mass., to represent Olson conveyors in all New England states, with the exception of Connecticut.

● Opening of a regional sales office and warehouse building in Atlanta, Ga., has been announced by officials of Minnesota Mining & Manufacturing Co. The new facilities, designed to permit better service in Georgia and neighboring states, are located at 732 Ashby St., NW.

● **Paul Duncan**, material handling sales engineer, has been appointed representative in northeastern Ohio by the Raymond Corp., Greene, N. Y. This new sales office will be located at 2375 Noble Rd., Cleveland. Additional lines will be handled by the distributing firm.

● **Hinds & Associates, Inc.**, Kansas City, Missouri: this firm has been appointed to represent the Mechanical Rod Packing and Building Maintenance Division of the Flexrock Co., Philadelphia. Territory covered will include the states of Kansas, Nebraska, Oklahoma, Arkansas, and western Missouri.

Cut materials handling costs with **MAGCOA** Magnesium **DOCKBOARDS**



DIVISION OFFICES

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Magcoa Magnesium Dockboards are proving the perfect answer to freight car and truck loading problems in every type of industry. One man can position it without the aid of truck, chain or hoist because it weighs ¼ as much as steel ramps of equal size and strength. Hand holds in each corner of the special quarter round safety curb permits ease of handling. Beveled edges and bend angle keeps Dockboard flush with floor and dock. Slipping out of position is impossible due to safety span designed to application requirements. Put completely modern Magcoa Dockboards to work for you . . . they'll take the load out of your carloading operations.

Representatives in All Principal Cities

MAGNESIUM COMPANY of AMERICA East Chicago, Ind.

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MARCH, 1952 • FLOW

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"Fastest Machine" Speeds American Box Production

Exceedingly high production of wood-cleated fibreboard "panel" boxes, manufactured by the American Box Co., Cleveland, is credited to the "fastest machine of its kind in existence", recently perfected and now in use at the company.

According to Henry S. Kubes, vice president and general manager of the firm, the new equipment is already producing wood-cleated fibreboard "panel" boxes for rush defense contracts at double the speed of conventional machines.

Corrugated paper or fibreboard sheets and wooden cleats fed into the machine at one end are stapled together into first-grade "panels" and flow in a continuous stream from the other end. The entire operation is completed in a matter of seconds, according to Mr. Kubes.

You are looking at the SOLUTION to your STORAGE PROBLEM



STORACK

Steel Framing Material
For Portable Storage Racks

**PERMANENT, YET REARRANGEABLE
TO FIT CHANGING STORAGE NEEDS**

Your storage arrangement is never obsolete with reusable STORACK materials. Designs of every kind for every commodity are available. Simplified construction—channel, fittings and serrated nuts—lets you assemble your own racks and save many dollars. No skilled labor needed. No welding or special tools required.



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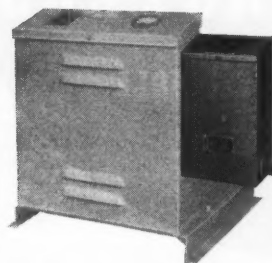
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HOW TO MAKE 1 SINGLE CIRCUIT DO THE WORK OF 2 CHARG-O-MATIC Motor Generator Battery Charger

Double the capacity of your Charg-O-Matic "KX" or "HX" single-circuit battery charger—at a fraction of the cost of an additional charger! Hertner's new Double Duty Charge Control Unit, mounted on your Charg-O-Matic, makes this easy.

You plug in two truck batteries at once. Each is individually charged. When the first is recharged, it is automatically disconnected and the same cycle is repeated for the second. When both are fully charged, motor generator automatically shuts down, with no further attention. Begin recharging at end of a day. By tomorrow morning you'll have two battery-powered trucks back in operation.



Specify a Double Duty unit when ordering your new "HX" or "KX" Charg-O-Matic, or mount a Double-Duty Unit on your present "HX" or "KX" Charg-O-Matic (if manufactured after Dec. 1, 1949). Either way, you'll double the usefulness of your battery-charging equipment.

For additional information on the "HX" or "KX" Charge-O-Matic with Double Duty Unit call in your nearest electric truck representative, or write direct for bulletin No. 201R.



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12690 ELMWOOD AVE. • CLEVELAND 11, OHIO

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drums and
barrels**



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LIFT-JACK SYSTEMS

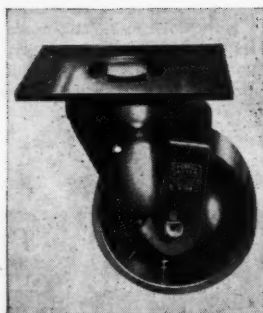
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& E-Z ROLL
WHEELS



**Nearly 4000
TYPES of
CASTERS
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OPPORTUNITIES

USED EQUIPMENT MEN JOBS LINES

Rates: for "Positions Wanted" \$8.00 minimum, limit 25 words. For all other classifications \$10.00 minimum for 25 words; each additional word 25c. Boldface type or all capitals, \$12.00 minimum for 25 words, each additional word 35c. Box address counts as five words. All insertions payable in advance.

FOR SALE

Conveyor, power belt, 12" wide, 10' long, lightweight, portable, floor model, as good as new, \$425.00. Box 3152 FLOW.

For Sale — Conveyor Rollers, 55 used, excellent conditions; 3" O.D., 3/16" wall, 11/16" Hex. Shaft; 8'-1 1/2" overall Shaft; 8'-0" overall Roller. Brunnquell Iron Works, 418 Claremont Ave., Jersey City, N. J.

ELECTRIC FORK & PLATFORM trucks, used, with or without batteries. Clark, Mercury, Yale, Crescent, Automatic—and other top buys, gas & electric. Special Price to Quantity Buyers! **Bond Industrial Maintenance Co.**, 51 Clarkson St., NYCity 14, N. Y., Watkins 4-0450.

USED SKIDS

For Sale 30" x 54" skids in first class condition. 6 1/4" underneath clearance, 3/4" or 1" wood deck, angle iron sides, strap iron legs. \$8.00 each. The Glidden Co., 1825 North Laramie Avenue, Chicago, Illinois, Mr. J. McIlrath.

1 Hyster Fork Lift Truck 2000# Capacity, Excellent Condition. \$1150.00 F.O.B. Elyria Ohio.

75 Warehouse Platform H.D. Non Tilting Trucks 75" x 36" with Manual Couplings, Removable Bar Handles, Steel Bound Deck Frames, Main Wheel 18" Swivel Wheel 9". \$35.00 each or 3 for \$100.00 F.O.B. Elyria, Ohio Sam Becker & Sons 431 Oberlin Rd., Elyria, Ohio.

For Sale—Belt Conveyor: 60' in length, 12" wide belt, motor driven, variable speed, complete with metal stands and side boards, built in 10' sections, used approximately 120 hours. **Make offer.** F.O.B. Herrin, Ill. **DIAGRAPH-BRADLEY INDUSTRIES, INC.** Box 247, Herrin, Ill.

One Crescent Lo-Liftor, Model LDLE Platform Type Truck, complete with battery and charger, in excellent operating condition. One Spies Industrial Type Traffic Line Marker. Inquire R. W. Latimer, c/o American Greetings Corp., 1800 West 78th St., Cleveland, Ohio.

LINES WANTED

Precision industrial products including electrical and hydraulics that require parts distribution, shop and outside service staff facilities. We now cover industrial services for the Eastern Pennsylvania, New Jersey, and Delaware area; representing two manufacturers with national distribution. Box 3352 FLOW.

FRANCHISE OFFERED

Exclusive Franchise, San Francisco territory available from National Conveyor Manufacturer. Send resume your organization. Box No. 3252 FLOW.

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DISTRIBUTORS WANTED INTERNATIONAL STAPLE & MACHINE CO. ESTABLISHED 1938. MANUFACTURER OF PATENTED STAPLE MACHINES AND STAPLES OF PROVED RELIABILITY. INTERNATIONAL STAPLE MACHINES CLOSE CORRUGATED AND FIBRE BOARD CARTONS FROM THE OUTSIDE, AFTER THE CARTON IS FILLED. STAPLE SALES PROVIDE ACTIVE REPEAT BUSINESS ON ESTABLISHED ACCOUNTS.

Lightweight Portable Carton Closing Machines Sell at Retail as low as \$75.00

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MARCH, 1952 • FLOW

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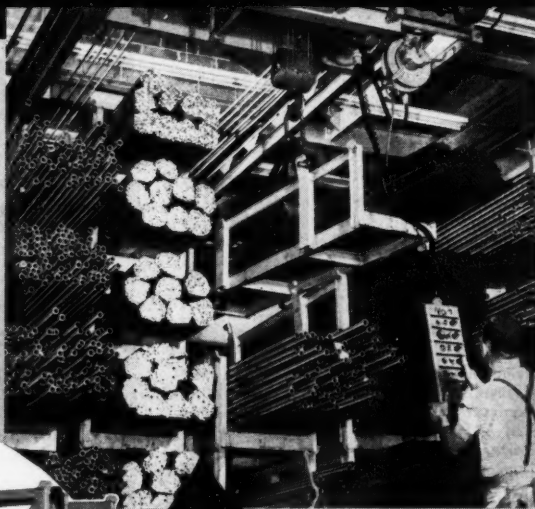
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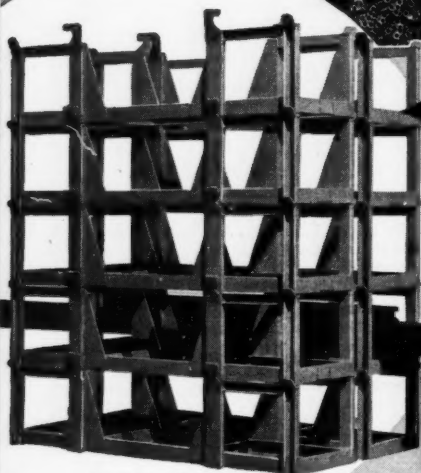
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PS PORTABLE Heavy Duty BAR RACKS

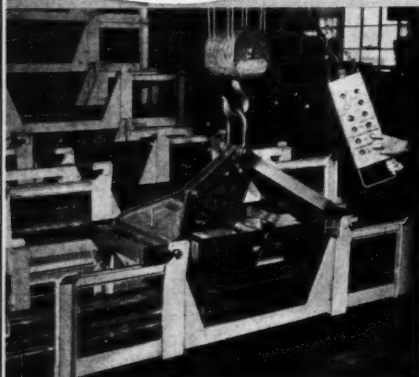
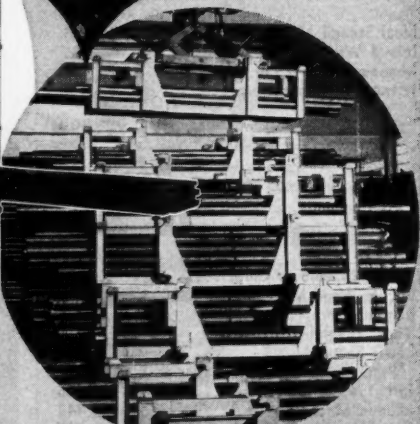
for quick, convenient, safe, efficient storage. Handling and storage of steel shapes simplified for one-man operation. Using overhead crane for storage in tiers, rack selection is no problem. Design permits bar selection from any rack without disturbing tiers. Built to any capacity and length of stock.



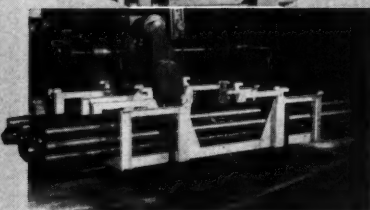
Any rack easily accessible.



Item No. C-497



Automatic Tong by HEPPENSTALL, Pittsburgh, Pa., for easy pick-up and safe carrying.



Easily placed on trucks for removal to machines not under crane.

When Ordering Always give "Item" number; this will help prevent error.

Write for catalog.

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Palmer Shile Co.

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PRODUCTS



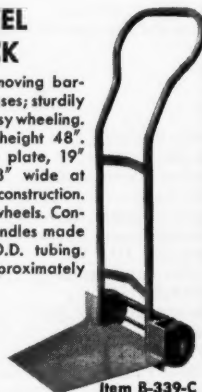
NS-298
\$5115

HAND DUMP TRUCK

Reinforced heavy sheet steel. 1/2 cubic yard, capacity—two 8" semi-steel wheels and two 4" metal swivel casters. Wt. 125 lbs.

SHOVEL TRUCK

For pick-up and moving barrels, hampers or cases; sturdily constructed and easy wheeling. Overall standing height 48". Heavy steel nose plate, 19" wide at base, 13" wide at front. All welded construction. Two 6" diameter wheels. Convenient shaped handles made of heavy 1 1/4" O.D. tubing. Weight of truck approximately 50 lbs.



Item B-339-B
roller bearing
metal wheels
\$3025

Item B-339-C
rubber tire, roller
bearing wheels
\$3575



Combination TRUCK and DRAIN RACK

Loads Automatically

A dual purpose truck that can be used to move barrels or drums and also serve as a drain rack. Available in two styles—with or without detachable handles. Sturdy frame-welded construction. Weight approximately 90 lbs.

Item NS-506
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Item NS-506 DH
(truck complete with
detachable handles) \$4895

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Metal Wheels
\$3685



Item S-911R
Molded on
Rubber Wheels
\$4235

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Rubber Wheels
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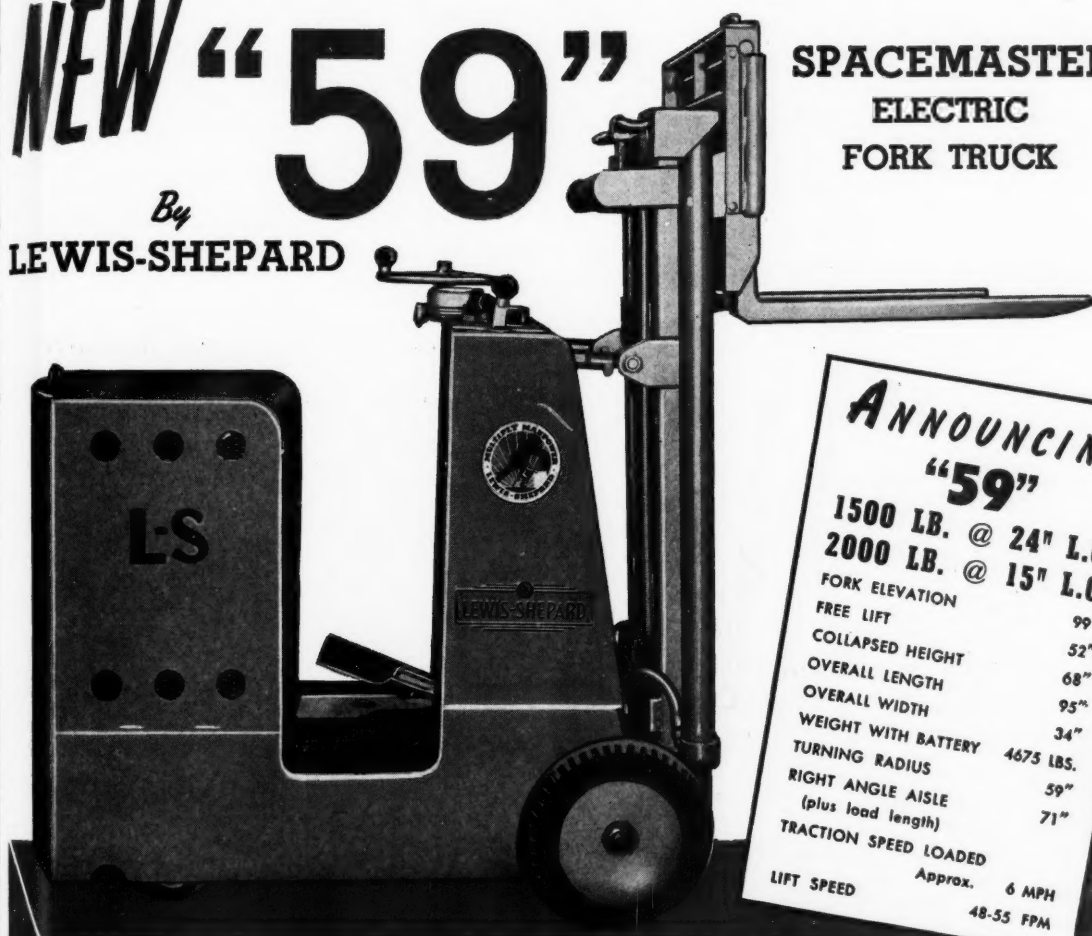
BARREL TRUCK

It Loads Automatically. Three style wheels—metal, rubber or metal and pneumatic. Capacity 1000 lbs. 22" wide for narrow openings. Weight 85 lbs.

NEW "59"

By
LEWIS-SHEPARD

SPACEMASTER[®]
ELECTRIC
FORK TRUCK



ANNOUNCING
"59"

1500 LB. @ 24" L.C.
2000 LB. @ 15" L.C.

FORK ELEVATION	
FREE LIFT	99"
COLLAPSED HEIGHT	52"
OVERALL LENGTH	68"
OVERALL WIDTH	95"
WEIGHT WITH BATTERY	4675 LBS.
TURNING RADIUS	59"
RIGHT ANGLE AISLE (plus load length)	71"
TRACTION SPEED LOADED	
LIFT SPEED	Approx. 6 MPH 48-55 FPM

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RUGGED? All steel welded, with one-piece chassis and "guts" that can really take it.

PEP? Fast as gasoline trucks for all practical purposes. Extra lifting and lowering speed.

EASY TO OPERATE? Operators say it handles in reverse as naturally as forward. Designed for easy trailing. Most maneuverable truck, capacity for capacity in the industry.

EASY STEERING? New type steering yoke, directional gear box, cushion steering tire make "Smooth Steering" even in the roughest jam.

SAFE? Stand up, center control, with clear, unobstructed operator's corridor, accessible from both sides, provides ultimate in safety . . . saves time.

LOW MAINTENANCE. Absolutely NO greasing points. NO under truck adjustments. All components easily accessible.

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PRODUCTS INC.
DEPT. E-4 WATERTOWN 72, MASS.
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The "MASTER" Line[®]

**The Most Complete Line of
Materials Handling Equipment on Wheels**

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STACKERS and PORTABLE CRANES • HYDRAULIC and MECHANICAL LIFT TRUCKS • FLOOR TRUCKS • STEELERS • SKIDS • STORAGE RACKS

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IN THE MATERIALS HANDLING EQUIPMENT FIELD

FIRST in number of certified buyers

FIRST in advertising volume

FIRST in editorial leadership

To reach the "front line" of materials handling buyers in the 25,000 larger plants having continuing materials handling problems, use FLOW. Manufacturers agree that FLOW gives complete coverage of the "cream" of the market because FLOW is the only publication in its field that provides CERTIFIED BUYER CIRCULATION.

Complete coverage of the basic buying market is produced by FLOW through 46 selected distributors of materials handling equipment in 69 strategic trading areas who subscribe to FLOW for their active customers and prospects. More than 96% of the circulation is addressed to individuals.

FLOW is first in advertising volume because it leads in results from this select market.

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